

Army Accessions Research Consortium

"Shaping the Future Force and Predicting Its Success"

31 August – 3 September 2009 Hampton, Virginia





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Report Documentation Page

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Army Accessions Research Consortium "Shaping the Future Force and Predicting Its Success"

Tuesday, 1 September 2009

- Welcome and Introductions (COL Jeff Schamburg)
- Dopening Remarks by LTG Freakley
- Presentation of the Accessions Research Award
- Research Award Winner-Expanded Enlistment Eligibility Metrics (Dr. Tonia Hefner)
- Track Leader Introductions

COHORT TRACK: "Understanding the Great Individuals that Make Us Army Strong"

- Track Introductions (Don Bohn, G2/9, CAR)
- Army Accessions Research: Lessons Learned (Dr. William Bland, Booz Allen Hamilton)
- WholeSoldier (LTC Paul Kucik, US Military Academy)
- A Review of Millennial Generation Characteristics and Military Workforce Implications (Dr. Henry Griffis, Center for Naval Analyses)
- New Sailor Survey (Matthew Waits, Navy Recruiting Command)
- Navy Recruiting Command Performance Based Costing (Mike Sumrall, Deloitte Consulting LLP)
 Officer Selection Predicting Continuance and Performance Indices in the Officer Accessioning
 Process (Dr. Robert Kilcullen, Army Research Institute)
- The Effects of Changes in Institutional Policies and Socio-cultural Factors on Initial Entry Physical Fitness Levels of Cadets at the United States Military Academy (Dr. Whitfield East, US Military Academy)
- RecruitMilitary Prior Service Lead Generation (Rick Jones, RecruitMilitary)

MARKET TRACK: "Managing the Next Perfect Storm: Alternative Market Futures"

- Opening Remarks
- Meet & Greet Overview of FY09 MRA Internal Research
- G6 Briefing Current and Future Initiatives (Lonnie Williams, USAAC G6)
- Teen Research Unlimited (TRU) Presentation (Michael Wood, Sr. Vice President & Director of Syndicated Research, TRU)
- Q&A Session on Obesity and Related Longitudinal Studies (Dr. Ogden, CDC)
- 21st Century Training for 21st Century Learners (Dr. Jill Lindsey, Wright State U)
- JROTC Program Overview (COL Vanderbleek, JROTC)

OPERATIONS TRACK: "Revolution in Recruiting Operations"

- Track Introductions
- Pinnacle Experiment (COL Shultis, USAREC)
- Tactical Segmentation A Practical Application (Mitch Stokan)
- Position and Mission Modeling (MAJ Andrew Ehlert)
- Adaptive Missioning Process (Mike Nelson, USAREC)
- Monitoring & Managing Achievement in Pinnacle (SGM Richardson, USAREC)
- Simulating the Pinnacle Concept (Laura Guay, G2/9 CAR)
- Lessons Learned Special Ops Recruiting (Gallup)

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Tuesday, 1 September 2009 - Continued

TECHNICAL TRACK: "Technical Solutions to Improve Research Productivity"

- Spatial Analysis (Beth Hagensen, G2/9 CAR)
- Human Subjects Protection Refresher (Melanie Clark, G2/9 CAR)
- Neural Networks (David Scarborough, Kronos)
- Introduction to Defense Technical Information Center (Candy Parker, DTIC)
- DTIC Bibs and Alerts (Candy Parker, Defense Technical Information Center)
- Variable Exploration with PASW Modeler (Richard Bauer)
- Human Subjects Protection Refresher (Melanie Clark, G2/9 CAR)

Wednesday, 2 September 2009

- Opening Comments (COL Jeff Schamburg)
- "Childhood Obesity in the US: Prevalence, Trends & Health Risks." (Dr. Cynthia Ogden, Centers for Disease Control)

COHORT TRACK: "Understanding the Great Individuals that Make Us Army Strong"

- Recruiter Quality of Life (Army) (Donna Dorminey, G2/9, CAR)
- Recruiter Quality of Life (Navy) (Dr. Jennifer Jebo, Navy Recruiting Command)
- On-Campus Market Potential Study (Dr. Bert Huggins, US Army Cadet Command)
- Manning the All-Volunteer Force from a Changing Youth Market Wavier Analysis (Dr. Bruce Orvis, RAND)
- Foreign Language Recruiting Initiative (Dan Putka, HumRRO)
- Army National Guard (LTC Maureen Weigl, ARNG)
- Mental Health Screening of Soldiers (LTC Ingrid Lim, USAREC)
- How New BCT Soldiers Respond to Tough Training (Dr. Stephanie Muraca, Directorate of BCT, FT Jackson)

MARKET TRACK: "Managing the Next Perfect Storm: Alternative Market Futures"

- Human Dimension (COL Chandler & Mark Atkins ARCIC)
- Cognitive Research in Battle Command (Dr. Sylvia Acchione-Noel, FCS)
- Lurrent JROTC/PFL/March2Success Data Overview (JROTC, G2/9, G6)
- ☐ JROTC/PFL/March2Success Data Working Group (JROTC/G2/9)
- JROTC/PFL/March2Success Data Working Group Continued (JROTC/G2/9)
- US-NEXUS/Virtual Worlds Demo & Q/A Session (LTC Greg Pickell)

OPERATIONS TRACK: "Revolution in Recruiting Operations"

- ARNG Recruiting Innovations (COL Mike Jones, ARNG)
- Army Experience Center (MAJ Dillard, Army Experience Center)
- Army Reserve Recruiting Assistance Program (LTC Slatton, AR G1)
- MEPCOM Virtual Interface Processing System (COL Larry R Larimer, MEPCOM)
- LTC Kamei, Office Chief Army Reserve Program Analysis & Evaluation

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TECHNICAL TRACK: "Technical Solutions to Improve Research Productivity"

- Intro to Defense Technical Information Center (Candice Parker, DTIC)
- Process Simulator M&S Tool (Joe Corona, RISD)
- Defense Technical Information Center Bibliographies & Alerts (Session 2) (Candice Parker, DTIC)
- Spatial Analysis (Beth Hagensen, G2/9 CAR)
- Human Subjects Protection Refresher (Melanie Clark, G2/9 CAR)
- Neural Networks (David Scarborough, Kronos)
- Qualitative Research Methods: Focus Group Design, Implementation, Analysis, and Reporting (Dr. Steven N. Aude, ICF International)

Thursday, 3 September 2009

- Welcome Remarks (COL Jeff Schamburg)
- Filling the Ranks: An Update for Today's Realities." (Dr. Cindy Williams, MIT)
- Research Award Runner-Up, Events Analysis and Decision Support Tool (LTC Greg Lamm)
- Research Award Runner-Up, Branching Methods for Engineer Goal (Mr. Craig Zeitler)
- Track Outbrief Prep Time
- Outbrief to General Officer Panel
- Closing Remarks by LTG Freakley
- ARC Hotwash (ARC Track leaders & G2/9 Staff)

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Army Accessions Research Consortium

Cohort Track

Cohort Track: "Understanding the Great Individuals that Make Us Army Strong"

- Track Leader: Don Bohn
- Focus: How characteristics of individual Soldiers that comprise a cohort can be used to explain outcomes of the whole.
- It is difficult to predict the actions and success of a specific individual, but the better we understand how characteristics of individuals affect behavior, the better we can predict the success of the overall cohort.
 - personal characteristics (such as demographics, quality marks, and requirement for enlistment waiver)
 - features of the enlistment contract (such as term of service and presence of an enlistment incentive)
 - controlling for the recruiting environment (such as policy changes, pilot tests, and economic conditions)

Cohort Track: "Understanding the Great Individuals that Make Us Army Strong"

Goals:

- Develop a recommended way forward for future "Quality" research
- Develop a recommendation for future research on how we look at applicant potential
- Identify how we can make progress on adjusting various levers when trying to keep accessions within a band of excellence

USAAC ACCESSIONS RESEARCH CONSORTIUM (ARC) PRESENTATION

Army Accessions Research: Lessons Learned

"A look back on three years in Accessions Command"

Hampton, VA 1 September 2009

This document is confidential and is intended solely for the use and information of the client to whom it is addressed.



Agenda

- Background
- ▶ What Did We Do?
- ▶ How Well Did We Do It?
- What Were Our Biggest Challenges?

Background

- ▶ Served as Chief, Accessions Systems Division (ASD) for the USAAC G2/9, Center for Accessions Research (CAR), from Jun 06 through Jun 09
- Just retired after 26+ years of service as a Field Artilleryman and ORSA Officer
- No experience in recruiting or personnel issues prior to my ASD assignment, but substantial test and analysis experience
 - Operations Research Analyst, TRAC-WSMR
 - Field Artillery Test Officer, TEXCOM
 - Operations Research Analyst/Division Chief, TRAC-FLVN
 - Instructor/Program Director, Department of Systems Engineering, USMA
- Education
 - BS, Electrical Engineering and Computer Science, USMA
 - MS, Systems Management/Operations Research, Florida Institute of Technology
 - PhD, Systems Engineering, University of Virginia



USAAC G2/9 Major Focus Areas

- ▶ Provide Environmental, Macro, and Operational-Level Analysis
- ▶ Identify and Understand the Market
- Analyze Market Communications
- Analyze the Accessions Process
- Analyze Cohorts
- ▶ Conduct Program and Policy Analysis, Evaluation, and Prioritization
- Provide Data Management and Collection
- Develop Modeling & Simulation Capabilities

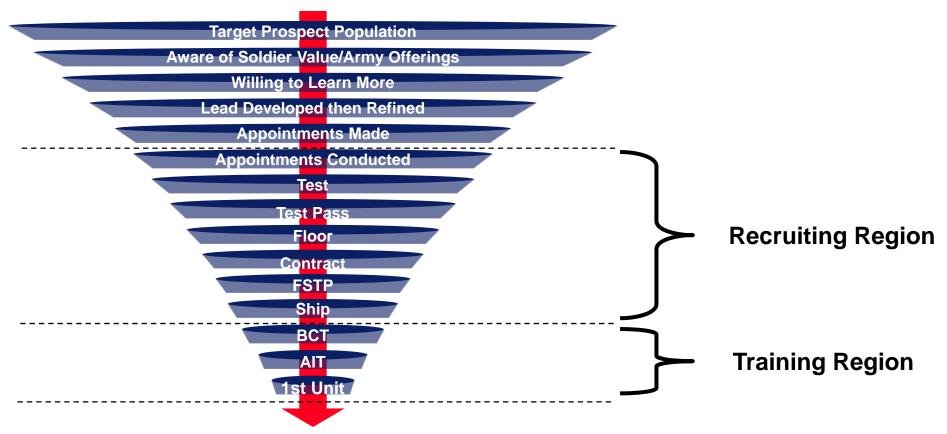


ASD Focus

Areas

Enlisted Recruiting Funnel

ASD focused on analysis of activities in the Recruiting and Training regions of the Enlisted Recruiting Funnel





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Plus many other non-project related requirements!

Representative ASD Projects

- Analyze the Accessions Process
 - Production Trend Analysis
 - Recruiter Effectiveness and Efficiency
 - Recruiter Selection
 - ROTC Cadre Effectiveness and Efficiency
 - Future Soldier Training Program (FSTP) Loss Survey
- Conduct Program and Policy Analysis, Evaluation, and Prioritization
 - Incentive Analysis
 - Assessment of Recruit Motivation and Strength (ARMS) Program
 - Tier Two Attrition Screen (TTAS) Program
 - Enlistment Age Policy Analysis
 - Tattoo Policy Analysis

- Analyze Cohorts
 - Waiver Analysis
 - Quality Analysis
 - Attrition Analysis
- ▶ Develop, Test, and Analyze Future Concepts
 - 10 Contract Company Pilot
 - Recruiter Incentive Pay (RIP) Pilot
 - Army Preparatory School (APS) Pilot
 - Military Accessions Vital to National Interest (MAVNI) Pilot
 - Early Background Checks (EBC) Pilot
 - Brigade Partnership Mission (BPM) Pilot
 - March-to-Success (M2S) Tutor Pilot



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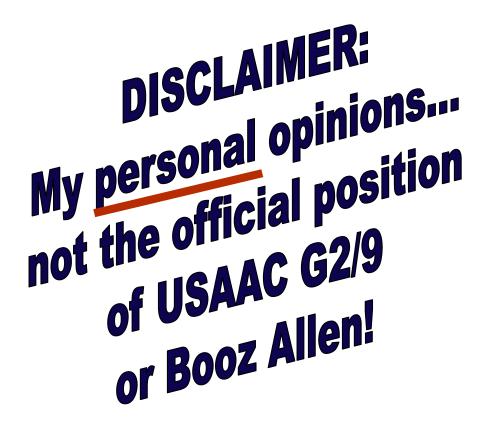
Agenda

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Informal Report Card...How did we do over the past three years?

- We did some things well
 - Produced actionable analysis
 - Discovered "golden nuggets"
 - Quantified Return on Investment (ROI)
- We could have done some things better
 - Provided 80% solution on time
 - Provided 100% solution late
 - Didn't get to address area at all





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What did we do well?

- ▶ Future Soldier Training Program (FSTP) Loss Survey
 - We provided analysis that USAREC leaders could use to improve FSTP management
- Assessment of Recruit Motivation and Strength (ARMS) Program
 - We provided analysis to help develop the program, identify ROI, validate program success, and identify areas for program expansion
- ▶ Tier Two Attrition Screen (TTAS) Program
 - We provided analysis to identify ROI and validate program success
- Enlistment Age Policy Analysis
 - We provided analysis to identify an appropriate policy and validate success of policy change
- ▶ Tattoo Policy Analysis
 - We provided analysis to identify an appropriate policy and validate success of policy change



What did we do well?

- Waiver Analysis
 - We integrated analysis support from multiple agencies into a holistic assessment of waivers
- Attrition Analysis
 - We provided analysis of attrition rates throughout the accession process that USAAC leaders could use to support strategic decisions
- ▶ Military Accessions Vital to National Interest (MAVNI) Pilot
 - We developed a mechanism to track contracts and provided analysis to identify ROI and validate program success
- ▶ Early Background Checks (EBC) Pilot
 - We provided analysis to help develop pilot, identify ROI, and validate program success
- Brigade Partnership Pilot (BPM) Pilot
 - We developed a mechanism to track referrals and provided analysis to identify ROI and validate program success



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What could we have done better?

- Production Trend Analysis
 - We did a good job of tracking historical production data but we never developed a valid forecasting mechanism
- Recruiter Effectiveness and Efficiency
 - We never improved upon the Gross Write Rate (GWR)/Net Write Rate (NWR) metrics
- Recruiter Selection
 - We never validated the success of the Warrior Attribute Inventory (WAI)-based recruiter selection tool
- ▶ ROTC Cadre Effectiveness and Efficiency
 - We never really looked at this area at all
- ▶ Incentive Analysis
 - We took too long to join the Enlisted Incentive Review Board (EIRB) process and hence didn't have much impact on the process of setting bonus or incentive policies



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What could we have done better?

- Quality Analysis
 - We did a good job of assessing quality mark accomplishment and analyzing the resulting impacts but never completed our efforts to define new, more useful measures of quality
- ▶ 10 Contract Company Pilot
 - We didn't do as good a job of analyzing data or capturing lessons learned as we could have
- ▶ Recruiter Incentive Pay (RIP) Pilot
 - We didn't dig as deep or provide as thorough an analysis as we could have
- Army Preparatory School (APS) Pilot
 - We never resolved all the data issues and weren't able to provide as thorough an analysis as we could have
- ▶ March-to-Success (M2S) Tutor Pilot
 - This pilot became overcome by events as USAREC implemented M2S Tutors commandwide in the middle of the pilot, confounding the analysis



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Agenda

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- ▶ How Well Did We Do It?
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What were our biggest challenges?

- ▶ Balancing resources against demands
- ▶ Finding the right balance between Current and Future Analysis efforts
- Synchronizing among the other staff and fighting through stovepipes
- Using stand-alone resource models

ARC_Bland_v2

So much to do and so few resources...

- Limited analytical capability
 - Authorized Strength: One LTC, one MAJ, two GS-13s, one GS-12, and one GS-11
 - Augmentation: One LTC (Retiree Recall)
- Lots of demands for analysis
 - Enlisted recruiting funnel Area of Responsibility (AOR) is very large
 - Countless short-suspense, high-priority Requests for Information (RFIs)
 - Quarterly and Annual After Action Reviews (AARs)
 - Several simultaneous projects and pilots
- ▶ Had to conduct "Economy of Force" missions on some projects









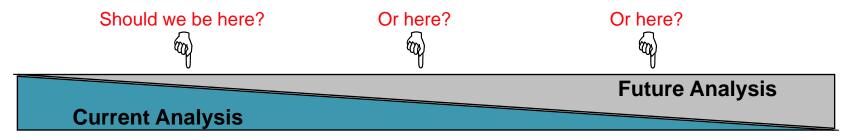
Find some help or pare down requirements

- The Command Implementation Plan (CIP) process provided a forum to identify needed manpower requirements
 - Unfortunately, while some authorizations were shifted from other staff elements, most if not all of these authorizations were vacant and don't come with a body
- If in-house resources aren't available, will need to find the funds to bring in external assets
- If additional manpower isn't available, will need to reduce the number of requirements to ensure quality analysis products
- ▶ Also, implementing a time tracking mechanism could help focus the limited analysis capability on the most critical projects and identify "manpower leakage"

ARC_Bland_v2

Hard to find the right balance between Current and Future Analysis

- Current Analysis: Required for daily survival
 - Backward-looking, with more immediate impact
 - Necessary to track pilot/program ROI
 - Answers "How DID we do?" and "How ARE we doing?"
- ▶ Future Analysis: Required for long-term success
 - Forward-looking, with less immediate impact
 - Necessary to set conditions for success
 - Answers "What SHOULD we do?" and "WHEN/WHERE should we do it?"
- ▶ Not enough manpower to simultaneously do both tasks well!

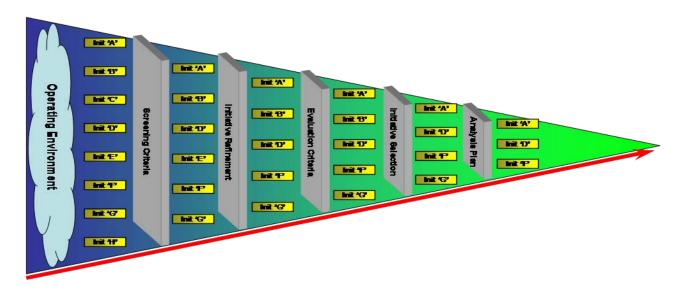




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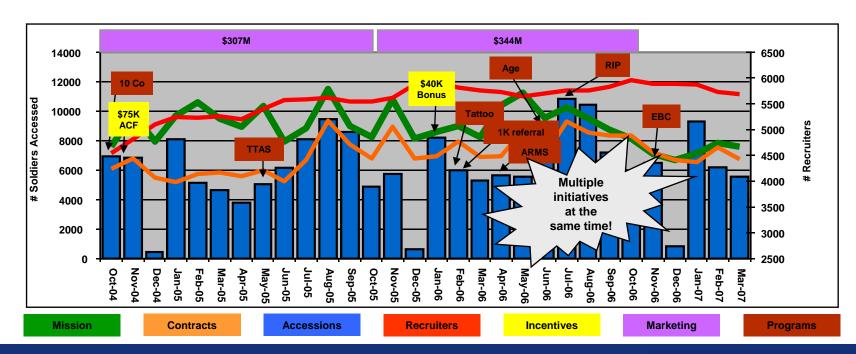
Implement an effective Initiative Management program (Futures Cell)

- Such a program could meet the command's Future Analysis needs and allow ASD to focus on meeting Current Analysis needs
 - Identify potential initiatives, develop business cases for promising concepts, prioritize concepts for pilots and/or tests based on accepted metrics, and prepare plans/reports on approved pilots and tests
- ▶ Would also help integrate initiatives with strategic planners, resource managers, and executors



Hard to synchronize among the staff and fight through stovepipes

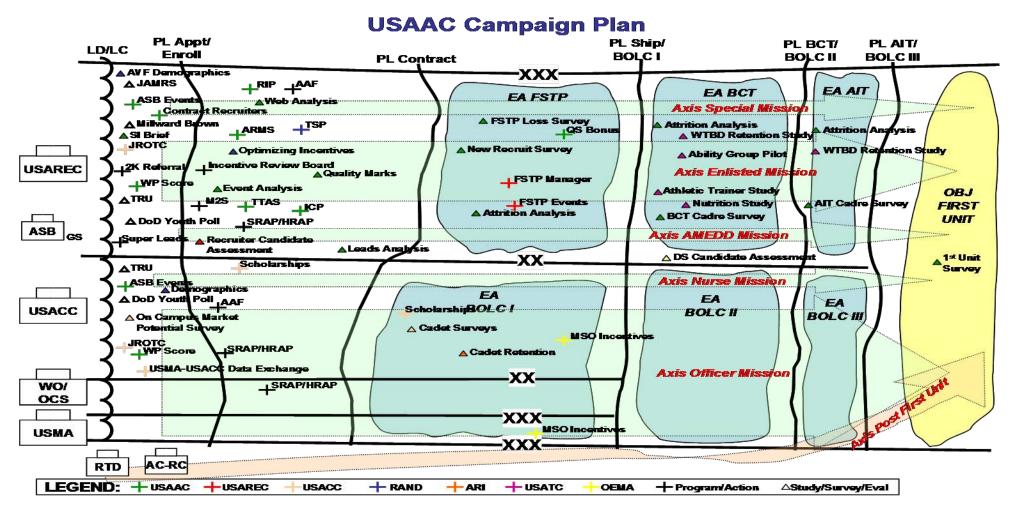
- Staff sections and subordinate commands often followed their own agenda, without coordinating across the command
 - We saw command-wide policy/program changes conducted in the middle of several pilots, confounding the analysis and subsequent results
 - We implemented multiple initiatives at the same time





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Need a Campaign Plan to synchronize analysis with operations





Using stand-alone resource models

- Conducted annual mission analysis in order to identify resource requirements (Recruiters, advertising/marketing budget, and incentive budget/policies)
- Conducted periodic "What-if" analysis of various mission/resource scenarios
- We used several different models to help identify these resource requirements, but these models were not integrated or synchronized across the accessions community
 - For example, the current Recruiting Force model identifies the number of recruiters needed, based on Accession Mission, GWR, anticipated FSTP Loss Rate, and size of Entry Pool
 - It identifies the same requirement, regardless of unemployment rate or advertising budget

These stand-alone models don't capture the interdependencies and interactions among the various resources and the recruiting environment



Mission

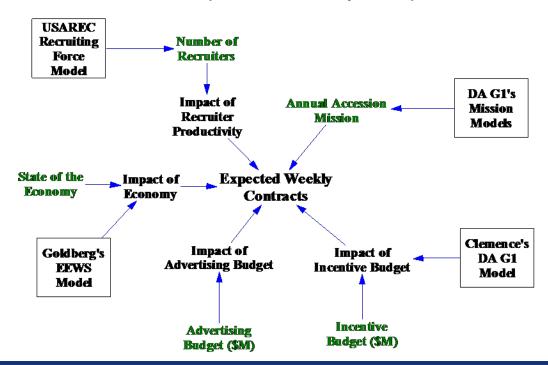
Environment

Recruiters

Advertising

Need a holistic model that integrates these stand-alone models

- Will provide a better understanding of wide ranging interdependencies, systemic effects, unintended consequences, systemic delays, and feedback loops across boundaries
- Will provide a better understanding of the long term effects of today's policy, resourcing, and investment decisions over time and improve the ability to explore alternatives





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Questions?

William S. Bland, PhD

Associate

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Booz Allen Hamilton, Inc. 1003-D N. Wilson Road Radcliff, KY 40160 USA Tel (270) 352-2727 Mobile (270) 304-5269 bland william@bah.com



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"WholeSoldier" Performance

MAJ Rob Dees, ORCEN Analyst
MAJ Sam Huddleston, ORCEN Analyst

LTC Paul Kucik, ORCEN Deputy Director



WholeSoldier Performance:

- Background / Issue / Synergy
- Research Gap / Frame / Consultation
- Performance Domains & Attributes
- Performance Measurement
- Performance Domain Weights
- Sample Individual Performance Report
- Sample Population Performance Data
- Recommendation / Future Work
- Possible Strategic Impacts

Supporting Material:

- Problem Synergy
- Guidance Mapping & Mathematical Modeling
- Similar Models
- Initial WholeRecruit Potential Insights

<u>Mission</u>: Provide recommended WholeSoldier Performance measurement system IOT provide the force an improved developmental counseling/assessment methodology and inform a variety of policy decisions.

Project Background Client: USAREC/USAAC



> Background

In June 2008, MG Bostick commissioned a study by the USMA Department of Systems Engineering's Operations Research Center of Exellence (ORCEN) to answer the question "What is a Quality Soldier?" The initial guidance was to "get outside the box" and figure out how to "measure the heart of a Soldier."

>Issue:

"First and foremost, the <u>Army is Soldiers</u>. No matter how much the tools of warfare improve, it is <u>Soldiers</u> who use them to accomplish their mission. <u>Soldiers</u> committed to selfless service to the Nation are the centerpiece of Army organizations. Everything the Army does for the Nation is done by <u>Soldiers</u> supported by Army civilians and family members. Only with <u>quality Soldiers</u> answering the noble call to serve freedom can the Army ensure the victories required on battlefields of today and the future."

- FM 1, The Army, Opening Paragraph

What is a "Quality Soldier?"

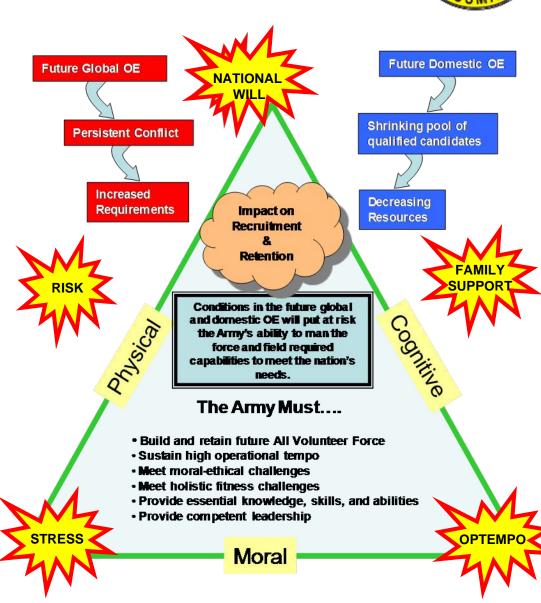
Problem Synergy

(1 of 2)



Operational Problem (HD Study, Para 1-2):

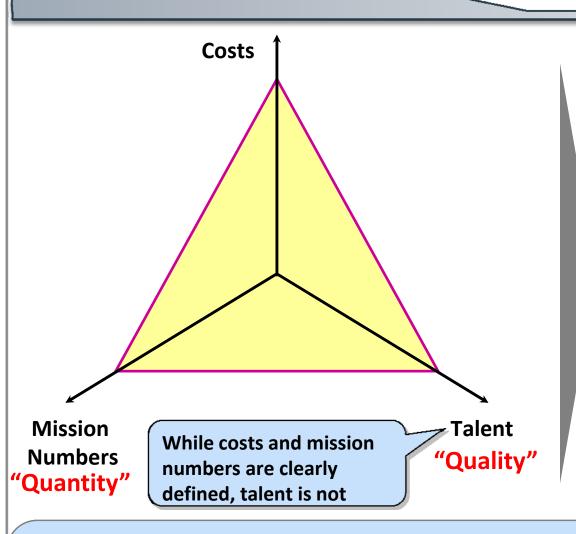
- □ Faced with continuous employment across the full range of military operations, the Army will require extraordinary strength in the moral, physical, and cognitive components of the human dimension.
- □ Existing accessions, personnel policies, and force training and education development efforts will not meet these future challenges, placing at grave risk the Army's ability to provide combatant commanders the forces and capabilities necessary to execute the National Security, National Defense, and National Military Strategies.



Source: Futures Discussion on the Human Dimension, ARCIC, BG Martz to CSA, 13 Sep 08

Problem Synergy

(2 of 2)



In order for the Accessions
Enterprise Strategy to provide
specific guidance on how to balance
between mission numbers, talent,
and cost it must:

- Employ clear definitions for mission, costs, and talent
- Determine under what circumstances to pull talent, cost, or mission numbers levers when tradeoffs are necessary¹
- Develop a process to determine how to apply each lever in particular circumstances
- Be explicit about circumstances when mission numbers cannot be lowered and cost/talent levers must be used

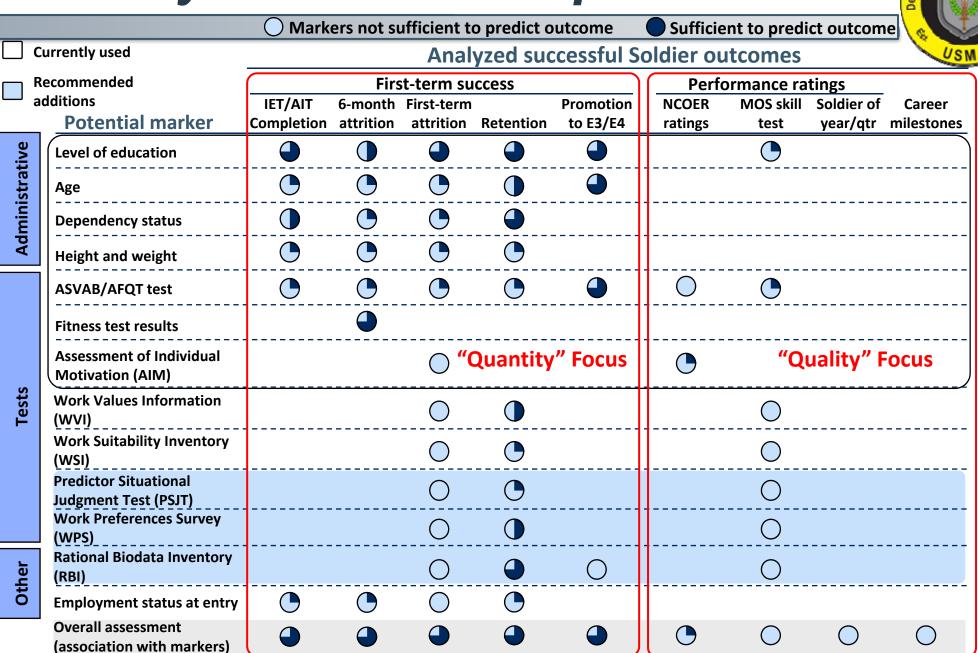
A refined definition of talent will facilitate informed tradeoff decisions

- The Accessions Enterprise should develop a definition of talent aligned with existing guidance
- Talent should be <u>measured along a continuum</u>...we must measure entire population to do this, not just the "most successful" ones...we want to provide fidelity along the entire spectrum, and for making decisions it is just as important to measure in the lower portion of the "successful" (retained/serving) population.
- Existing research provides a basic definition of talent, but a more refined definition will require additional research

Source: McKinsey team analysis

Comments: ORCEN

"Quality" Research Gap



We are getting pretty good at predicting the "quantity" of service, but have

a gap in our ability to predict the "quality" of service.

<u>Comments</u>: ORCEN
<u>Source</u>: McKinsey (ARI and RAND reports)

Re-Framing the Problem



qual·i·ty n. –

- 1. a. An inherent or distinguishing characteristic; a property.
 - b. A personal trait, especially a character trait.
 - c. Degree or grade of excellence: *yard goods* of low quality.

po·ten·tial -

- adj. 1. Capable of being but not yet in existence; latent: a potential problem.
 - 2. Having possibility, capability, or power.
- n. 1. The inherent ability or capacity for growth, development, or coming into being.
 - 2. Something possessing the capacity for growth or development.

per·for·mance n. –

- 1. a particular action, deed, or proceeding
- 2. the manner in which or the efficiency with which something reacts or fulfills its intended purpose.

GEN Thurman's Thoughts:

"Maybe instead of quality, we should have used the term indicators of military enlistment success. However, for now we will leave the correction of our past mistakes to some future enterprising recruiting commander, policy maker, or researcher."

Our Thoughts:

- We currently evaluate Soldiers by talking about performance / potential.
- Quality is certainly possessed and implies what you are. Potential recognizes uncertainty and implies what you can be...message to our nation?
- We maximize potential through catalysts such as individual effort, leadership, and training to achieve high performance.
- We must measure performance to understand the indicators of potential.

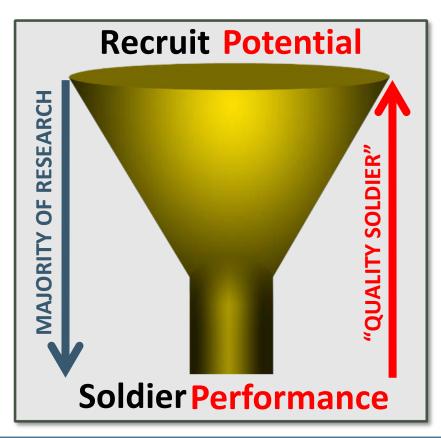
"There is no greater impediment to the advancement of knowledge than the <u>ambiguity of</u> words." - Thomas Reid, Scottish Philosopher

Difference of Approach



Longitudinal Study

- High Cost
- Long Duration
- Collect massive
 amounts of data on
 what we think might
 solve the problem, and
 see if something useful
 is revealed over time.
- "We'll see in the end."



Value-Focused Study

- Low Cost
- Short Duration
- First determine "what we want."
- Collect focused data and make inferences on the larger population.
- "Begin with the end in mind." Stephen Covey

"Many hiring decisions start off on the wrong foot because the company hasn't clarified exactly what it wants in the new hire."

- Hiring and Keeping the Best People, Harvard Business Essentials, p. 6.

"The perfection of means and confusion of ends seems to characterize our age." - Einstein

Both are needed, but value-focused studies or "what we want" should inspire longitudinal studies.

Consultation



3rd BCT, 1CD at Fort Hood (18-20 Nov 08):

- 48 sets of PL/PSG for modeling:
 - "WholeSoldier" Performance Attributes
 - Measurement of Attributes
 - Relative Importance of Attributes
 - "WholeRecruit" Potential Indicators
- 13 Platoons / 195 Soldiers for data collection:
 - SL/PSG/PL evaluations of performance on attributes & holistically
 - SL/PSG/PL weighting of Attributes
 - Soldier Questionnaire on Indicators

USMA:

- Department of Behavioral Sciences & Leadership
- Department of Math Center for Data Analysis and Statistics
- Department of Physical Education
- Army COE for the Professional Military Ethic
- Center for Company Level Leaders
- Office of Plans, Policy, & Analysis
- Admissions Office
- Superintendent's Office

Army:

- Drill Sergeants
- Recruiters
- Past & Current Company Commanders
- Current SF Team Leaders
- SFAS (holistic assessment)

Others:

- Naval Special Warfare (C-SORT)
- FBI (Interview Process)
- Air Force (Emotional Intelligence)
- Crossfit and RAW (Functional Fitness)

Research:

- McKinsey Consulting
- ARI
- Rand
- ARCIC

USAREC / USAAC:

- MG Bostick
- Rick Ayer
- LTC Dorminey
- Mitch Stokan
- Frank Shaffery
- Kim Phillips

- LTG Freakley
- COL Schamburg
- LTC Bland
- LTC Lamm
- Judy Stephenson
- COL Bagley

"WholeSoldier"

Performance Attributes



Purpose:

Selfless Service Sacrifice Commitment Loyalty Duty

Interaction:

Respect **Empathy** Compassion Humor

Knowledge:

Job Tasks/Skills Education **Trainability** Learning

Judgment:

Common Sense **Logical Decisions Understanding Anticipation** Insight/Filtering Adaptive/Flexible

Motivation:

Will to Win **Endurance** Resilience Stick-to-it-iveness Heart / Drive Determination **Work Ethic**

Cognitive Domain

Medical Health:

Application:

Planning

Communicating

Executing

Illness Resistance Nutrition **Body Composition**

Character:

Honor Integrity Justice Candor **Personal Courage**

"The moral is to the physical as three is to one."

- Napoleon

Athletic Skills:

Coordination Agility Balance Power Speed Accuracy **Flexibility Reaction Time**

Conduct:

Maturity Discipline Bearing Coolness

Self-Esteem:

Moral

Domain

Confidence Self-Worth Self-Efficacy

General Fitness:

Physical

Domain

Cardio Endurance **Cardio Strength** Muscular Endurance Muscular Strength

"WholeSoldier" Performance Measurement

of Systems France ing
USMA

Moral Domain

	Wiorai Domain												
	1	2	3	6	7								
KEY	"Always" "Unacceptable" "Separate from Army"	"Most of the time" "Very Bad" "Problem Soldier"	"Sometimes" "Bad" "Needs a bit of work"	"Neutral" "Only what is required" "Just Enough"	"Sometimes" "Good" "Bit more than standard"	"Most of the time" "Very Good" "Solid Performer"	"Always" "Example for others" "One of the very best"						
	Purpose: Selfless Service, Commitment, Loyalty, Duty, Competitive, Action-Seeking												
	being before others an	listic attitude. Soldier ter nd unit tasks. Soldier doe anything within.	esn't seem driven from	Soldier shows no positive or negative attitudes towards the team.	Soldier feels committed to internalizing inherited values of the Army Soldier is a self-less member of a team and is pro-active in understanding the Army/Unit/PLT mission.								
	Motivation: Will to V	Vin, Endurance, Resi	ience, Stick-to-it-iven	ess, Heart, Internal Di	rive, Determination								
	Soldier quits and brings	silience and internal drive others down around him oldier doesn't respond we	/her. Soldier doesn't try	Soldier displays minimal effort required.	won't quit. Soldier inspi	forth best effort. Soldier through his/her actions. be counted on.							
	Social: Respect, Em	npathy, Compassion,	Humor										
Domain	soldiers. Soldier has no tendency to keep to	negative. Soldier is incon of put forth effort to intera o him/herself. Soldier is interactions with others.	ct with others and has a	Soldier is able to interact, yet only does it when necessary.	Soldier is comfortable in a social environment. Soldier is respectful and outgoing in the company area. Soldier is humorous and keeps PLT spirits up during difficult times. Others turn to this Soldier for support when they need help or just need a laugh.								
၂၉	Conduct: Maturity, [Discipline, Bearing, Co	oolness										
Moral D	command. Soldier p Soldier has problems to	beys orders and purpose performs tasks only when aking care of his/her pers about what is cool than v	under supervision.	Soldier has merely acceptable conduct.	Soldier performs well without supervision. Soldier tries to do the right thing. Soldier has exceptional military bearing and encourages others. Others look to this Soldier when things are rough. Soldier doesn't lose his/her cool under stress.								
	Character Ethic: Honor, Integrity, Justice, Candor, Personal Courage, Work Ethic												
	integrity to perform e his/her words. Soldie than the right answe	be trusted alone. Soldie essential tasks. Soldiers r's first response is to loo er. Soldier doesn't seem t Soldier doesn't take own	' actions don't match ok for loopholes rather o be concerned with	Soldier displays marginal character.	mistakes he/she has m trustworthy and hono	Soldier accepts the corrections. Soldier is truth even when it is information.							
	Self Esteem: Self-Efficacy, Self Worth, Confidence												
	and is unsure whether	in himself/herself. Soldie r or not he/she will reach ings. Soldier thinks of ex happen.	his/her goals. Soldier	Soldier displays minimal confidence level.	believes that he/she w	ons with others. Soldier that he/she goes after. en if they might fail.							
		1	: :\- D\ /DCC	1 Tl : - t l									

Note: This is based on our consultation with PL/PSG teams. Their thoughts were generally organized into good/bad/neutral performance behaviors, but they used different descriptors for levels of good/bad.

"WholeSoldier" Performance Measurement



Cognitive & Physical Domains

_	1	1 2 3 "Always" "Most of the time" "Sometimes"		4	5	6	7					
Шш	"Always"	"Always" "Most of the time" "Sometimes" "Unacceptable" "Very Bad" "Bad"		"Neutral"	"Som etim es"	"Most of the time"	"Always"					
ᄬ	•	•		"Only what is required"	"Good"	"Very Good"	"Example for others"					
	"Separate from Army"	"Problem Soldier"	"Needs a bit of work"	"Just Enough"	"Bit more than standard"	"Solid Performer"	"One of the very best"					
	Thought: Adaptabili	ty, Assertiveness, Dec	cisiveness, Initiative, F	lexibility, Common Se	ense							
omain	stubborn to change th Soldier does not show a else is doing. Soldier h difficulty thinking a	nality when giving input to e way he/she has perfor assertiveness and tends as trouble with everyday about problems from mul	med tasks in the past. to follow what everyone decisions. Soldier has tiple perspectives.	Soldier provides input only when asked.	Soldier has a willingness to be open-minded and flexible to Soldier thinks on his/her own and provides solutions to the Soldier identifies multiple creative alternatives to fix the problem can decide at the right time without hesitation. Soldier knows decide and when to gather more information.							
\parallel $\stackrel{\sim}{\sim}$	Capability: Visualiza	ation, Motor Coordina	tion, Technical, Analy	/sis/Insight, Conceptu	alization, Filtering/Mult	ti-Tasking						
ognitive	continually reliant on o	nical competence to com thers. Soldier can't "see tant factors. Soldier can task at a time.	" or "feel" the situation	Soldier has enough ability to complete tasks.	Soldier is able to understand and apply information to complete Soldier has shown ability to perform more than one task at a time standard. Soldier has provided insight on problems that has better overall understanding of a problem for the team. Soldier better overall understanding of a problem for the team.							
Ü	Knowledge: Educa	tion, Trainability, Capa	acity									
	has trouble applying w	nd has shown an unwillin /hat he/she has been tau on. Soldier can't retain i	ght. Soldier is slow to	Soldier has a basic understanding of his/her MOS	Soldier knows what is expected of him/her and attempts to learn more. Soldier knows his/her tasks, two levels up, and continually seeks highe learning. Soldier is an intelligent, life-long learner.							
	Physical Fitness:	ndurance, Stamina, S	Strength, Flexibility, P	ower, Speed, Coordir	nation, Agility, Balance	, Accuracy						
Domai	,	s/her share of the load. dards. Soldier is awkwa requiring coordination.		Soldier meets minimal physical requirements	exceeds established Army standards. Soldier is an ath							
ical	Medical Fitness: Illness Frequency, Physical Wellness											
Physic	-	y on profile or at sick call Soldier is sickly and lac	•	Soldier is of average medical health	Soldier is not hindered g	dier takes care of his/her						

Note: This is based on our consultation with PL/PSG teams. Their thoughts were generally organized into good/bad/neutral performance behaviors, but they used different descriptors for levels of good/bad.

Note: The domain attributes have been updated slightly since data was collected based on continued conversations with the Department of Physical Education and Department of Behavioral Science and Leadership.

"WholeSoldier"

Domain Weights



Elicitation Technique:

Top Down (direct)

• Bottom Up (inferred)_



Finding:

The moral domain is most important!

Insight:

- "Sir, if these boys show up with heart then I can train their bodies and minds."
- We currently screen in the physical and cognitive domains; leaders in the field may see far more variation in the moral domain.

Conclusion:

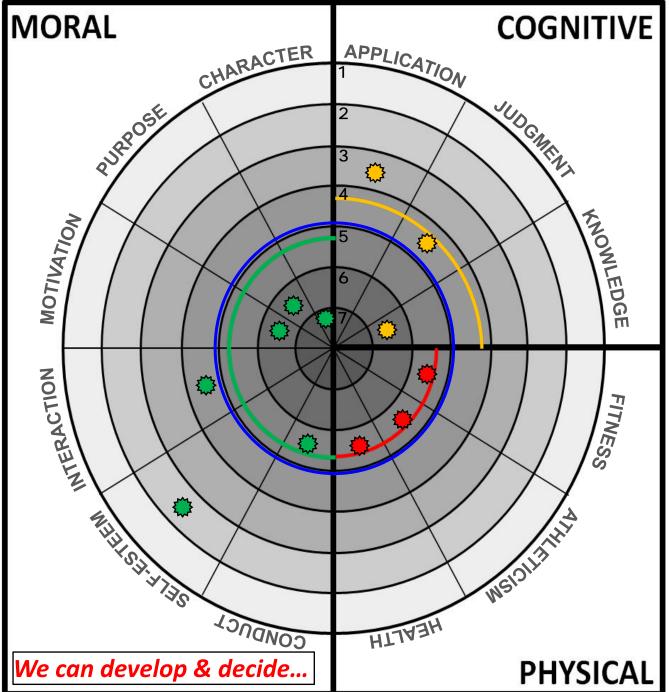
 We need to better assess and train in the moral domain...

Cognitive 23% Moral 55% **Physical** 22%

Note: For the Infantry population alone, the best fit weights came to 59% Moral, 25% Cognitive, and 16% Physical. The weights shown above are the best fit for the entire population sampled, but the following data sample slides are from the Infantry population for visualization purposes.

"WholeSoldier" Sample Performance Report

Infantryman #24



Moral Performance = 44/59 = 5.22/7

- Character- Totally trustworthy, and always sticks up for what is right.
- **Purpose-** Displays commitment and self-sacrifice to the team 95% of the time.
- **Motivation-** Soldier puts forth max effort and only rarely gives less than his all.
- Interaction Shows respect and is compassionate, but sometimes is awkward in interpersonal interactions.
- **Self-Esteem-** Doesn't display confidence or view himself as a valuable member of the team.
- Conduct Soldier displays maturity and discipline by completing tasks without supervision, but sometimes loses his cool when under stress.

Cognitive Performance = 15/25= 4.20/7

- **Knowledge-** Soldier demonstrates total knowledge of MOS tasks and studies to learn next level up.
- **Judgment-** Makes logical decisions, but has problems filtering irrelevant information.
- **Application-** Sometimes unable to plan effectively to implement decisions.

Physical Performance = 12/16 = 5.25/7

- Fitness- Scored 263 last APFT.
- Athleticism- Displays better than average coordination, agility in combat-focused tasks.
- **Health-** Maintains body better than average.

"WholeSoldier" Performance = 71/100 = 4.97/7

"WholeSoldier"

Sample Population Data 4 Infantry Platoons

	-	ة				E .		جَ	8	<u> </u>		Total			_	
NAME	Purpose:	Motivation:	Social:	Conduct:	Character:	Self-Esteem:	Thought	Capability:	Knowledge:	Physical:	Medical:	Elicited Total	Moral	Cognitive	Physical	Total
	7	7	7	7	7	7	7	7	7	6	7	100	59	25	15	98.6926
	5	6	7	6	7	7	7	7	7	7	7	95	53	25	16	93.8472
	6	6	5	6	7	6	6	6	6	7	6	95	51	21	15	87.5789
	6	6	5	6	7	5	6	6	7	7	5	95	50	22	14	86.6244
	6	6	6	6	7	5	6	5	5	7	6	100	51	19	15	85.2336
	7	6	5	7	7	5	6	5	5	5	6	100	53	19	13	84.6554
	7 5	6	6	3 6	6	7	6	6	6	7	5	95	49 48	21	14	84.0396
	5	6	6 5	5	6	5	6	6 5	6	6	6	85	45	22	14	79.4016 79.2734
	6	6	4	6	6	6	5	4	4	6	6	95	48	15	14	77.7282
	5	6	5	5	6	6	4	5	5	6	5	80	46	16	13	75.7640
	5	6	5	5	6	4	5	5	5	6	6	75	44	18	14	75.7378
	5	6	5	5	6	5	4	5	4	6	6	70	45	15	14	74.4603
	6	6	3	7	7	3	3	5	4	5	6	80	47	14	13	73.8387
	5	6	6	6	4	6	4	4	5	5	6	85	46	15	13	73.7372
	6	5	6	6	7	5	7	7	6	3	3	75	50	16	7	73.1613
	3 6	6	6	6 5	6	6	4	5	7 5	5	6	70	42 44	25	7 13	72.8442 72.5855
	5	5	5	5	5	5	5	5	5	5	6	70	42	16 18	13	72.4594
	5	5	5	3	6	7	4	5	6	5	5	75	43	18	12	72.2340
	6	5	6	4	6	5	4	4	5	5	5	70	45	15	12	71.8844
	5	5	3	5	6	5	4	5	5	5	7	60	42	16	14	71.7583
	5	6	4	4	5	5	6	5	4	6	5	70	41	18	13	71.5468
	6	6	4	5	7	2	3	4	6	5	5	75	44	15	12	70.9765
	5	6	4	5	5	5	4	5	4	5	6	65	43	15	13	70.4193
	5	5	4	5	6	4	5	6	4	5	4	60	42	17	11	69.7193
	5	5	5	4	5	2	4	5	3	7	7	60	37	14	16	67.5545
	5	6	7	4	6	3 6	6	5	5	6	- 6 - 5	55 50	37 40	15 16	14	66.3784 66.2992
	4	5	5	4	5	5	5	4	6	4	4	65	39	18	9	66.0722
	5	6	5	4	3	5	4	3	3	6	5	60	39	12	13	63.5387
	4	4	4	4	4	4	4	5	5	5	6	60	34	16	13	62.8163
	5	4	4	4	5	4	4	5	4	5	4	65	37	15	11	62.7680
	5	4	2 2 9	2	3	6	5	4	4	7	7	40	31	15	16	62.2660
	3	3	5	4	4	7	5	5	6	5	1	60	35	19	8	61.5160
	4	5	5	4	5	4	3	4	4	3	5	50	38	13	9	59.8534
	4	4	3	4	5	3	3	2	3	7	7	70	33	9	16	58.9814
	5	5	2	6	5	3	1	3	4	4	6	40 50	38	9	11	58.9730
	3	3	5	4	5	5	5	4	4	4	4	45	34 35	14 15	9	57.1429 56.5637
	4	4	4	4	4	4	4	4	4	3	4	30	34	14	8	55,8355
	4	5	3	4	4	3	3	4	3	4	5	40	33	12	10	55.0045
	4	5	3	2	3	4	5	5	2	5	5	30	29	14	12	54.9887
	4	4	3	4	4	4	4	4	5	2	4	25	33	15	7	54,6454
	1	2	5	3	4	4	5	7	7	. 2	3	25	26	22	6	53,518
	4	5	5	3	3	4	2	2	4	4	5	30	33	9	10	52.919
	4	3	3	4	4	3	5	5	5	2	2	50	30	18	5	52.299
	3	3	5	3	4	4	3	4	3	6	6	25 40	26	12	14	51.509
	4	4	4	2	3	4	4	4	4	3	4	35	30 27	13	8	50.9524
	5	4	2	2	2	2	3	4	3	5	7	20	25	12	14	49.881
	3	5	5	2	3	4	3	4	3	4	- 1	30	30	12	6	47.8652
	3	5	4	2	2	5	2	1	3	4	6	10	28	7	11	46.9172
	2	2	2	-1	2	4	5	5	5	4	4	2	18	18	9	44.471
	2	3	3	3	2	2	2	3	5	3	6	50	21	12	10	42.8115
	3	4	3	4	4	2	1	2	3	2	1	20	29	7	4	39.5092
	1 2	1 2	5	1 2	1	3	2	4	2	3	1	10	16	14	5	34.8802
	1	3	1	4	1	3	2	3	2	3	2	5	19	7	5	31.9733
	1	1	5	1	1	2	1	1	1	1	1	1	14	4	2	19.7675
	4	4	1	1	1	1	1	2	1	1	1	1	8	5	2	15.3846

Method:

- 1. Assess sub-domain performance (1-7 rating).
- 2. Evaluate performance holistically (1-100 rating).
- 3. Use correlation analysis to infer subdomain weights.
- 4. Calculate Moral, Cognitive, Physical, and *WholeSoldier* total.

Finding / Insight:

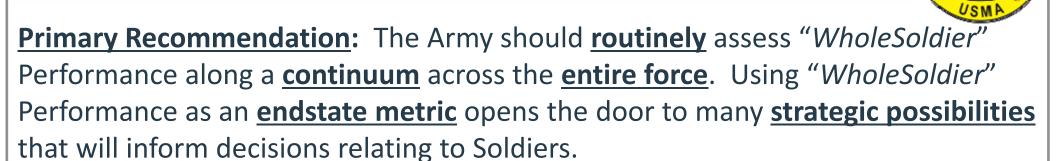
a. WholeSoldier "tells the story" of individual areas of relative strength and weakness and allows us to "see" the entire population.

Conclusion:

- a. We can provide many levels of distinction on *WholeSoldier* Performance.
- b. WholeSoldier Performance assessment is useful feedback to subordinates for use as a developmental counseling tool.
- c. WholeSoldier Performance is a good "endstate metric" and will provide information for sound decision-making in many areas.

Primary Recommendation

Concept



- ➤ Routinely The measurement of performance should be a standard practice. In implementation this might look like a new Developmental Counseling Form or Soldier Evaluation Report (SER) much like the OER/NCOER that will provide both detailed/holistic information to rated Soldiers and quality data for decision-making. We routinely assess the performance of officers and NCOs; why not Soldiers?
- ➤ Continuum / Entire Force All retained/serving Soldiers are "successful." We need to characterize their level of success/nature of service. Measuring only the "most" or "least" successful does not allow us to characterize along a continuum of success.
- ➤ Endstate Metric We should measure "what we want" rather than "what is easily measured" such that we "begin with the end in mind."
- > Strategic Possibilities Many are possible...see upcoming slides.

Strategic Possibilities

(1 of 3)

Given "WholeSoldier" Performance implementation, we can better:

Recruit: Develop holistic model of "WholeRecruit" Potential longitudinally and:

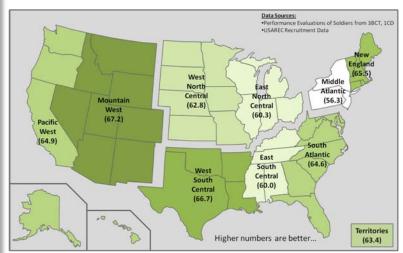
- » **Quantify risks/opportunities** involved in adjusting enlistment policies/standards.
- » "Screen in" during times of recruiting difficulty and "screen out" in times of recruiting richness.
- » <u>Offer individual incentives</u> for various MOS based on *WholeRecruit* Potential, desires of the candidate, and needs of the Army.
- » Continually <u>consider various "entry metrics"</u> for updates to the *WholeRecruit* model.
- » Adjust target market and allocate assets based on both quantity and quality.
- » Adjust marketing message to target "who we want."
- » <u>Issue recruiting missions</u> to reflect a distinct quantity vs. quality balance.



= High Performance based on Potential

= Expected Performance

= Low Performance based on Potential



NOTE: Only for discussion of possibilities; not intended as a conclusive result for use in current decisions.

Strategic Possibilities

(2 of 3)

Given "WholeSoldier" Performance implementation, we can better:

Train:

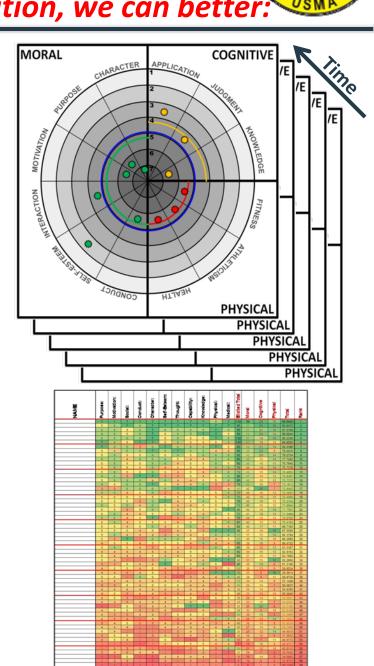
- » Offer individual training/education to those that are "best qualified" or "most needy."
- » Measure performance ROI of training/ education programs.
- » <u>Design unit training/education</u> to address performance trends.

Retain:

» Offer individual targeted incentives to retain "who we want."

Promote/Assign:

- » Understand attributes desired in next grade and promote "best qualified."
- » <u>Assign</u> the right individual to the right job or officer career field.
- » Refine officer career track policies to develop them multi-dimensionally across career.



Strategic Possibilities

(3 of 3)

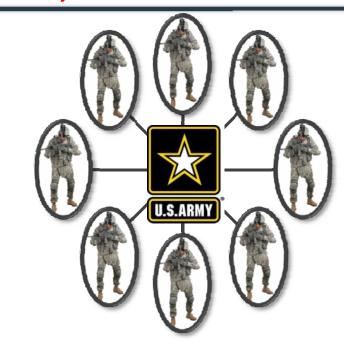
Given "WholeSoldier" Performance implementation, we can better: USINI

Accomplish the Mission:

» Relate WholeSoldier to WholeUnit performance by determining effects of differing portfolios of individual performance attributes combined to maximize unit performance through Systems Dynamics.



» Investigate best allocation of budgetary resources across the DOTMLPF(EE) spectrum.



Warfighting Power:

 $W = (D+O+M+F) * (LP)^{TEE}$

W = Warfighting Power

L = Leadership

D = Doctrine

P = Personnel

O = Organization

T = Training

M = Materiel

E = Experience E = Education

F = Facilities

. – Laucation

- Modified from GEN Schoomaker/GEN Boykin discussion

Discussion



"Above all, we must realize that no arsenal or weapon in the arsenals of the world is so formidable as the will and moral courage of free men and women."

-President Ronald Reagan

- Questions
- Insights
- Decisions

Contact:

MAJ Sam Huddleston
ORCEN Analyst / Instructor
Department of Systems Engineering
United States Military Academy
samuel.huddleston@usma.edu
845-938-5661

LTC Paul Kucik paul.kucik@usma.edu 845-938-5539

Recurring Anecdote



The following sentiments came up in nearly every conversation with NCOs throughout the duration of this work.

Drill Sergeants:

"Sir, I can tell you who the 'problem Soldiers' are during the first part of Basic, but I can't get rid of anybody...I hate sending some of these guys out to units because I wouldn't want them in my platoon."

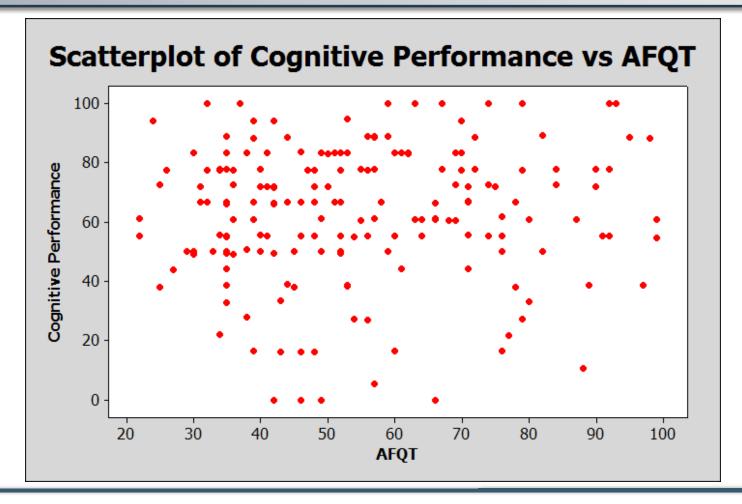
Platoon Sergeants:

"Sir, I would rather take 28 squared-away Soldiers to combat than take all 30 with 2 'problem Soldiers.'"

Our NCOs are generally united in saying that the Quality / Quantity tradeoff is a problem within the Army today. The tone is very frustrated when they talk about this topic...I feel more like a counselor than a researcher at times.

AFQT





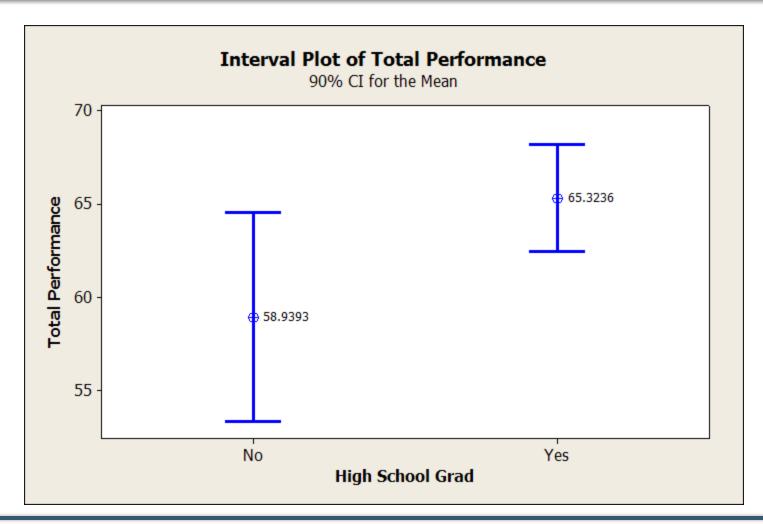
Finding: There is no apparent relationship between "Cognitive Performance" as evaluated in units (different from academic definition) with AFQT score.

<u>Insight:</u> "Sir, I care a lot more about common sense than I do about book smarts."

Conclusion: AFQT may not be a good predictor of what we want (quality) in terms of performance, but has been shown to be related to retention (quantity).

HS Graduation



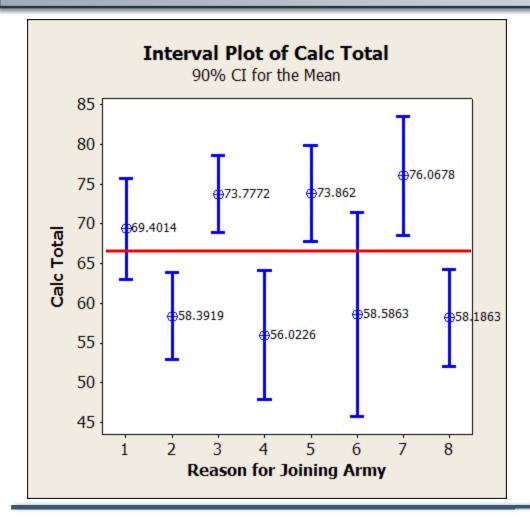


Finding: High school graduation appears to be an indicator, but not statistically significant in our data.

Insight: High school graduation may indicate some degree of "stick-to-it-iveness."

Conclusion: With more data, confidence intervals on HS Grad may shrink.

Reason for Joining



- 2) Which of the following is second most important to you about joining the Army?
 - 1) action & adventure
 - 2) steady paycheck
 - 3) service to Nation
 - 4) college benefits
 - 5) tough challenges
 - 6) health benefits
 - 7) good people/friends
 - 8) a fresh start in life

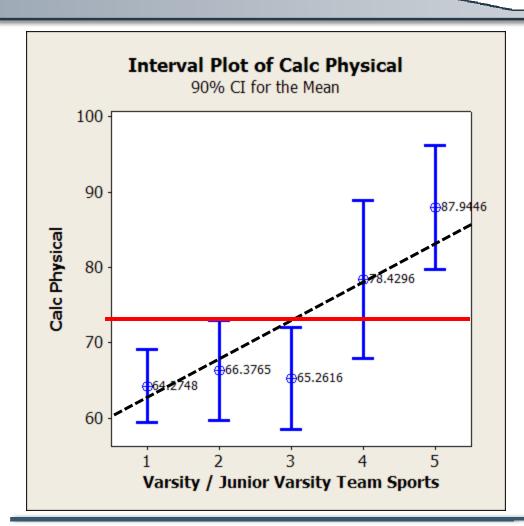
Finding: Reasons for joining the service are statistically significant .

<u>Insight:</u> "Marines 'issue a challenge' / 'sell it on service.'" – Dozens of interviewees

<u>Conclusion:</u> Pay and benefits may do a good job of impacting <u>quantity</u> as recruiting and marketing tools, but we would desire to inspire people to join for service, challenges, and the camaraderie of other good people when considering <u>quality</u>...

Athletic Participation





- 61) How many seasons of Varsity/Junior Varsity TEAM sports did you play?
 - **1**) **0**
 - **2)** 1-3
 - 3) 4-6
 - 4) 7-9
 - 5) More than 9

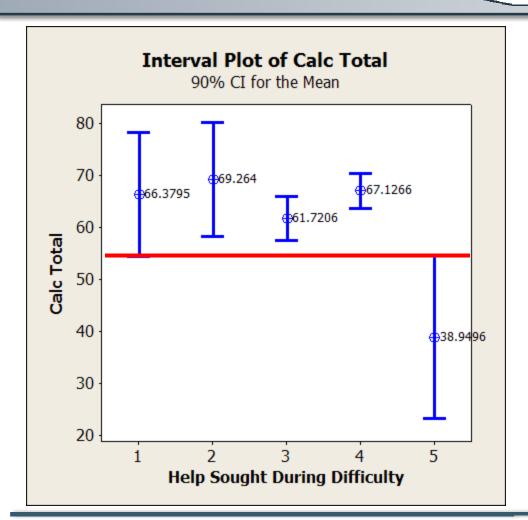
<u>Finding:</u> "Participation" in team sports displays statistically significant differences in physical performance evaluations...trend is useful in general linear model.

Insight: "We want athletes." - Many along with CSM Pippin/COL Volesky, 3BCT, 1CD

Conclusion: The results are similar when viewed against total performance; team sports are a valuable indicator for more than just the physical domain.

Seeking Help





- 17) Which of the following is most like you when you encounter difficulties?
 - 1) I avoid difficulties.
 - 2) I seek help immediately when I have a problem.
 - 3) I try on my own for awhile before I seek help.
 - 4) I work really hard before seeking help.
 - 5) I don't seek help; I will die trying.

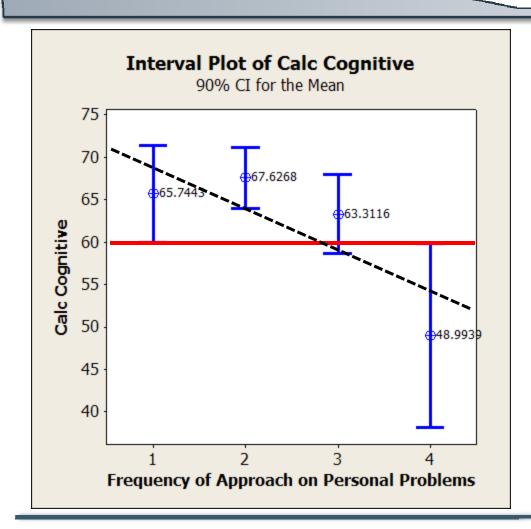
Finding: Attitude toward help is statistically significant.

<u>Insight:</u> Those that report total self-reliance do not perform well...teamwork is a must.

<u>Conclusion:</u> Self-reliance during times of difficulty may indicate an inability to perform well on a team whose mission has inherent difficulty...

Sought for Help





- 28) How often do people approach you to discuss their personal problems?
 - 1) Very often
 - 2) Often
 - 3) Sometimes
 - 4) Seldom
 - 5) Never

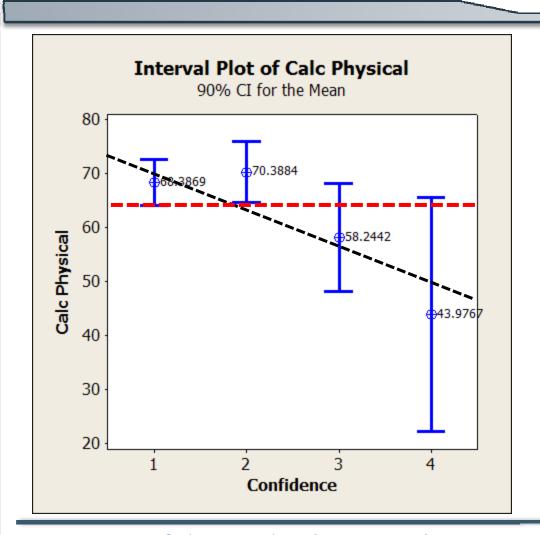
Finding: Being sought for help shows statistical significance...trend is useful in general linear model.

<u>Insight:</u> Soldiers seek out others that show strong cognitive performance...not the same as "academic performance."

Conclusion: Cognitive performance, broadly defined, helps the team...

Confidence





- 49) I can accomplish anything that I want to.
 - 1) Strongly agree
 - 2) Agree
 - 3) Neither agree nor disagree
 - 4) Disagree
 - 5) Strongly disagree

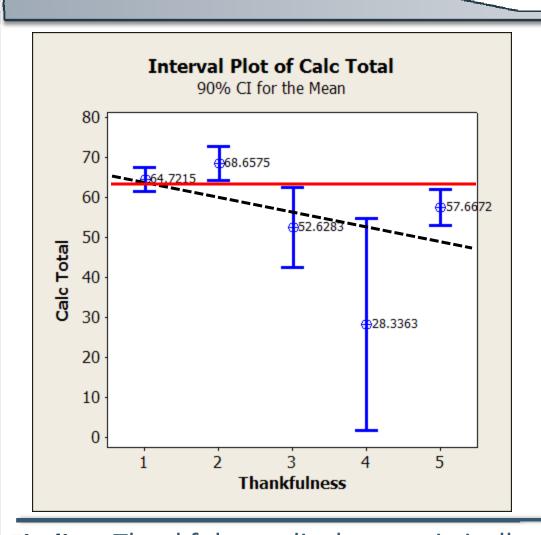
<u>Finding:</u> Confidence displays <u>nearly</u> statistically significant differences in physical performance evaluations...trend is useful in general linear model.

<u>Insight:</u> Confidence may relate to the mental strength needed for physical fitness.

Conclusion: Confidence is an attitude we want...differences may be better illuminated with more data.

Thankfulness





- 44) I feel pretty thankful for the people and things in my life.
 - 1) Very often
 - 2) Often
 - 3) Sometimes
 - 4) Seldom
 - 5) Never

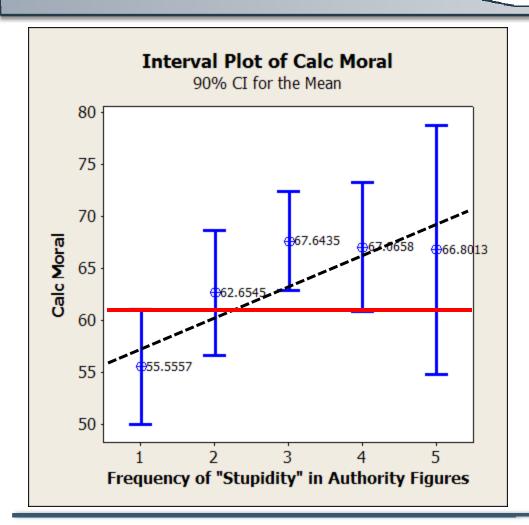
<u>Finding:</u> Thankfulness displays statistically significant differences in performance evaluations...trend is useful in general linear model.

<u>Insight:</u> Thankfulness may be linked to generally positive attitude towards others.

<u>Conclusion:</u> Thankfulness is an attitude we want...differences may be illuminated with more data.

Attitude towards Authority





- 46) How often do your teachers/bosses tell you to do something stupid?
 - 1) Very often
 - 2) Often
 - 3) Sometimes
 - 4) Seldom
 - 5) Never

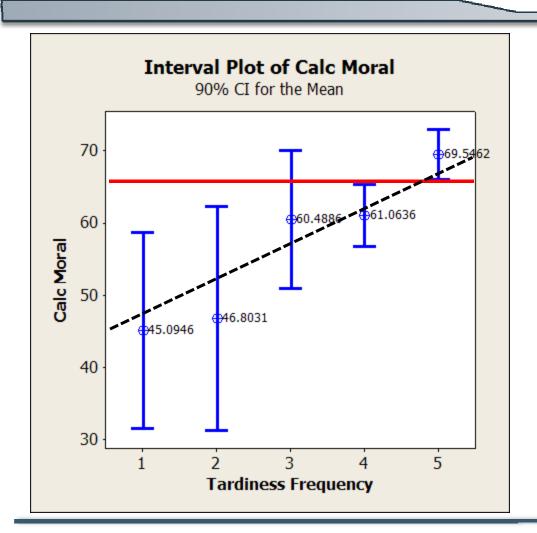
<u>Finding:</u> Respect for Authority displays statistically significant differences in moral performance evaluations...trend is useful in general linear model.

Insight: Respect for Authority is captured in moral performance evaluations.

Conclusion: Respect for Authority is an attitude we want...differences may be better illuminated with more data.

Tardiness





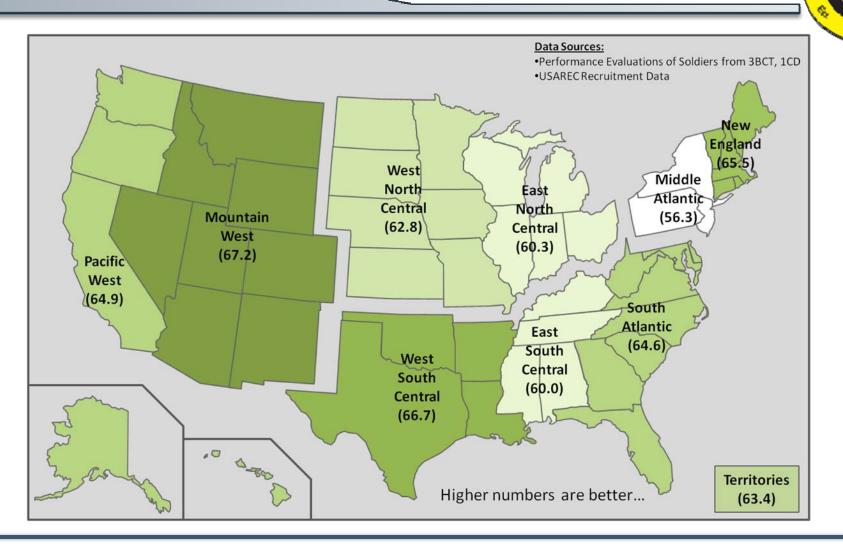
- 42) How often do you show up late to parties, work, etc.?
 - 1) Very often
 - 2) Often
 - 3) Sometimes
 - 4) Seldom
 - 5) Never

<u>Finding:</u> Frequency of tardiness is displays statistically significant differences in moral performance evaluations...trend is useful in general linear model.

Insight: Tardiness may be able to be measured easily/directly.

Conclusion: Tardiness may be an easily observable indicator that predicts performance in the moral domain.

Geographic



Finding: 80% confidence that average Soldier Performance is higher for West South Central than for Middle Atlantic...Moral Performance drives this finding.

Insight: More data will allow us to see differences at state, county, and smaller levels...

Conclusion: With more performance data, we can better focus our recruiting efforts!!!

A Review of Millennial Generation Characteristics and Military Workforce Implications

Darlene E. Stafford • Henry S. Griffis



CNA's Study on Millenniels

- CNA tasked by the 10th Quadrennial Review of Military Compensation (QRMC)
- Study completed early in 2008
- Review the research on "Millennials (Gen Y, Gen Next, Internet Generation, Echo Boom, etc.)
- Explore the potential impact of targeted policies, especially compensation and retirement, on this cohort



Research Question

Are there characteristics and challenges so *specific* to Millennials that the military must develop *targeted policies* in order to appeal to this generational cohort?



Approach

- Reviewed current literature to explore some of the unique characteristics of this generation.
- Identified some key characteristics of Millennials that may affect the future workforce.
- Analyzed the empirical evidence from various data sources with respect to the key characteristics.
- Explored how employers respond to changing workforce expectations that may or may not be driven by generational characteristics.



Summary of findings

- Generational cohorts consist of diverse people who can't accurately be depicted by the same character traits
- Some traits attributed to Millennials are a function of the age of the cohort, not the particular cohort
- Recruiting and retention are driven by the use of the right resources and incentives, regardless of cohort
- Some Millennial tendencies (on average):
 - They form a large cohort
 - Influencers are important
 - Use of technology is high, but not necessarily technological skills
 - Growth in educational attainment has been increasing, but is flat for young men



Background Issues

- Since the attacks of September 11, 2001, the military has increased the frequency and number of U.S. service members deployed to operations in Afghanistan and Iraq.
- Concerns surfaced about whether the All-Volunteer Force (AVF) is sustainable
- Competition for "the best and the brightest" between the military services and civilian employers is rising.
- Baby boomers (many experienced managers) will retire in large numbers over the next decade.
- Since this study was completed, the economic environment has changed drastically



What the "experts are saying."

- Neil Howe and William Strauss (Generational analysts/authors)
 - Generations produce observable historical patterns, based on events and circumstances that shape the lives of individuals according to which phase of life they occupy at the time
 - Millennials exhibit seven core traits: special, sheltered, confident, team-oriented, conventional, pressured, achievement oriented.



What the "experts are saying."

- Claire Raines (Generational analyst-workforce)
 - Young people are shaped by defining events, the media, parenting patterns, and societal moods.
 - There is value in broad generalizations when examining generational interactions in the workplace when they are used as flexible guidelines
 - Millennials are sociable, optimistic, talented, welleducated, collaborative, open-minded, influential, and achievement oriented.
 - They are a large generational pool with great potential, they require special targeting techniques to recruit, manage, motivate and retain them, they have higher expectations than past generations, and they have different values, needs, and ways of doing things.



What the "experts are saying."

- Pew Research (Generational analysts/Authors)
 - Although young people today are different in some ways, it's difficult to determine how different they are from past generations and to predict their behaviors in the future.
 - However, Millennials do have some unique characteristics: high use of technology (e.g., texting, internet, etc.), strong cohort identification, influencers matter much, high educational aspirations, desire for work/life balance, desire for wealth/fame.



Issues with "popular" generational research

- Using broad generalizations and datelines to understand generational differences is questionable. People are complex, not fitting neatly into these categories.
- Popular literature characterizing various generations lacks scientific quality. Hypotheses must be empirically tested.
- Many popular youth studies do not entail systematic collection and evaluation of data, but use selective data instead. They often lack representative sample populations.
- Many popular studies rely on single point-in-time data, rather than longitudinal data studies, which would offer greater validity in observing cohort change over time.



Millennial characteristics and workforce implications: *Optimism*

- Millennials are often characterized as extremely optimistic in their attitudes about life and the future
- Surveys indicate that Millennials have high expectations for a bright future, positive attitudes about their potential, a sense of entitlement, and they are team players.
- Millennial optimism may prove to be an asset to employers and other segments of society.
 Employers may benefit from a clear understanding of Millennial goals and perceptions.



Examination of Millennial characteristics through empirical data sources

- Unemployment -Millennials had lived most of their lives under market conditions with relatively low unemployment rates (since the mid-1990s).
- The low unemployment rate meant that there were many options available to all workers, including Millennials.
- This created a challenge for the military services, but with the current recession, this has now turned into an opportunity for the military.

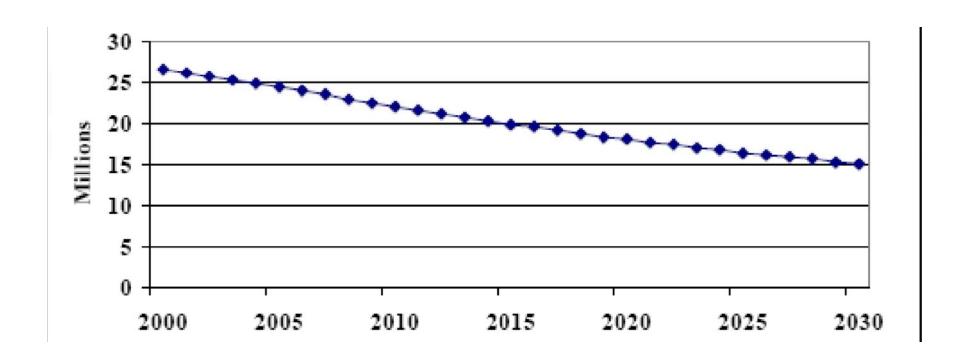


Millennial characteristics and workforce implications: *Influencers*

- Surveys indicate that Millennials rely on family, peers, and other influencers for daily interaction and for making decisions in life.
- A Pew Research poll reported a higher frequency of contact with parents daily compared to other age cohorts (e.g., text messaging, "helicopter parent" visits, cell phone calls).
- Influencers play an important role in the decisions of youth to join the military. Studies show that Millennials possess a particularly strong inclination toward social dependencies.
- The evidence builds a strong case for the significance of the role of parents and veterans, or the lack of such influencers, on enlistment decisions of Millennials.



Veteran influencers are declining





Millennial characteristics and workforce implications: *Technology*

- Millennials embrace the use of technology more than any previous generation because they were born into an advanced digital society. According to analysts and others, they use technology to communicate who they are, what they think, and how they live.
- There is a "digital divide" based on such factors as family income and race/ethnicity, even among Millennials, in terms of who has access and the type of technology to which they've been exposed.
- Millennial tech savvy pertains more to Internet searches and portals, text messages, cell phone usage, and computer gaming.
- Technological skills most sought after by employers today involve training in math, engineering, computer, and health sciences. Training will still be needed to close the gaps.



Use of Internet and real-time technologies

In the past 24 hours	Age			
did you	18-25	26-40	41-60	61+
Send/receive email	%	%	%	%
Yes	50	61	52	32
No	38	30	22	18
Not an internet user	12	9	26	50
Don't know	0	0	*	0
	100	100	100	100
Send/receive a text				
message on a cell phone Yes	51	26	10	4
No	49	73	90	96
Don't know	*	1	0	*
	100	100	100	100
Send/receive an				
instant message Yes	29	22	12	7
No	59	69	62	43
Not an internet user	12	9	26	50
Don't know	0	0	*	0
	100	100	100	100



Examination of Millennial characteristics through empirical data sources

- Size of the cohort As of 2006, this multiethnic/multiracial cohort exceeded 100 million (including immigrants), surpassing the Baby Boomer cohort of 77 million
- U.S. military, the Federal Government, civilian employers, universities, and other employers have been in fierce competition for the best and the brightest of the newly emerging workforce pool.
- According to the 2006 Youth Poll report, of about 32 million American youth in the prime recruiting age group (17 to 24), many are not eligible for military service due to medical, financial, moral, and legal problems.
- Minority youth are increasing as a percentage of the cohort size, but minority youth have recently been less likely to enter the military.

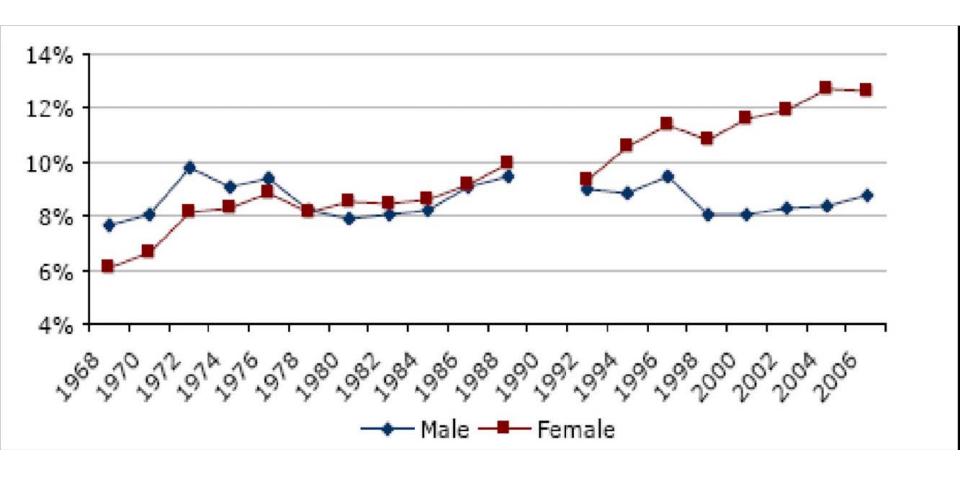


Examination of Millennial characteristics through empirical data sources

- Higher education The literature claims Millennials are very intent on going to college (Howe and Strauss; 2007). However, empirically much of the increase in college attendance is driven by older students and female students.
- Thus, generational cohort is only one factor among others. Higher education is becoming the norm for people of all ages and in all seasons of life.
- The increasing trend toward higher education could make it more difficult for the military to attract young recruits, but opportunities for paid education and training may create attractive incentives.
- So far the military's core recruiting population (young men) is not as affected by this trend.



Bachelor's degree or higher, age 18 to 25



CIRCLE; 2006

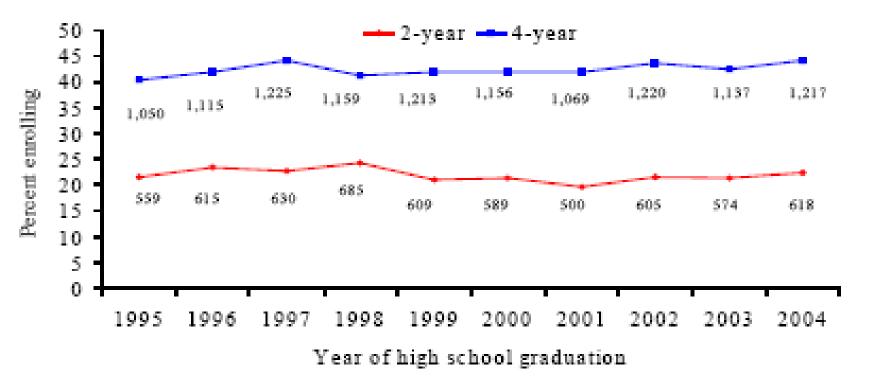


Community colleges provide a potential recruitment pool

- Costs are increasing for both 2- and 4-year colleges.
- Students in 2-year colleges may actually be easier to recruit because they have not committed to 4-year-long courses of study and financial obligations.
- They may also be more likely to take advantage of educational incentives offered by employers to reduce their education costs.
- Students currently enrolled in community colleges, dropouts or graduates who've entered the workforce, and high school seniors with plans to enroll in community colleges may have recruitment potential.



Community college trends





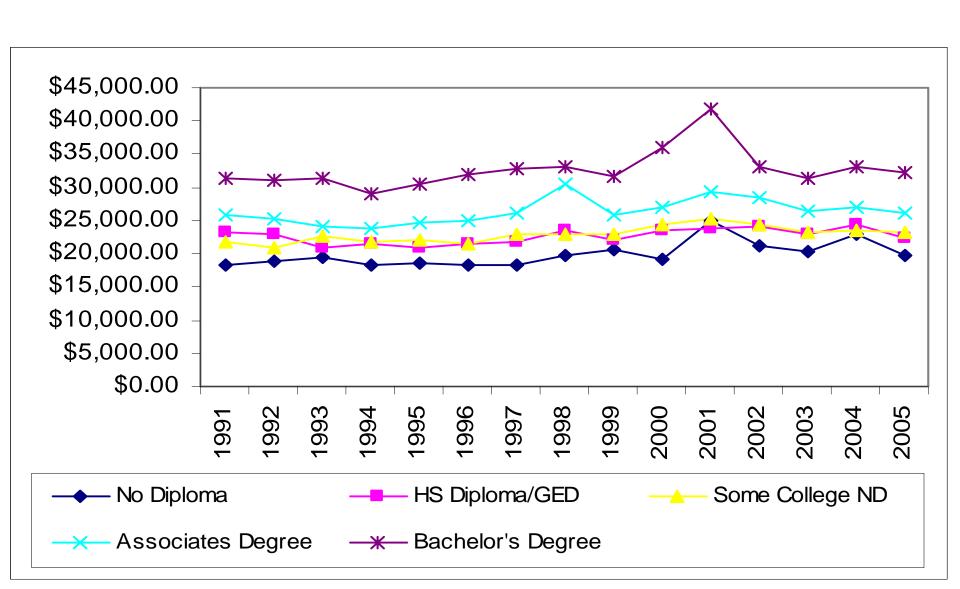
Peggy Golfin, CNA; 2007

Examination of Millennial characteristics through empirical data sources

- Compensation –Research shows that the value people place on education is correlated with their expected and actual earnings potential. In fact, higher education does lead to higher earnings. There are however, variations by race and gender (White males earning more.)
- While employers shouldn't put much stock in popular surveys of youth wage expectations, they should keep abreast of labor market compensation data.
- Response to compensation hasn't changed significantly across cohorts.



Mean earnings for men and women combined (ages 18 to 24) in real dollars: 1991 to 2005



Examination of Millennial characteristics through empirical data sources

- Retirement –recent studies report that the vast majority of young workers are failing to take advantage of retirement and other tax-deferred account opportunities.
- Young people are more focused on near-term goals.
- Retirement benefits are undervalued early in the career—they are not the most efficient placement of scarce compensation resources.



Summary of findings

- Generational cohorts consist of diverse people who can't accurately be depicted by the same character traits
- Some traits attributed to Millennials are a function of the age of the cohort, not the particular cohort
- Recruiting and retention are driven by the use of the right resources and incentives, regardless of cohort
- Some Millennial tendencies (on average):
 - They form a large cohort
 - Influencers are important
 - Use of technology is high, but not necessarily technological skills
 - Growth in educational attainment has been increasing, but is flat for young men



NEW SAILOR SURVEY

Results from FY 2009 Waves 1-4

Prepared for Accessions Research Consortium



Matthew Waits
Navy Recruiting Command
Strategic Plans, Research and Analysis Department (N5)
September 1, 2009



Purpose/Background

New Sailor Survey (NSS) - 27 Item questionnaire designed to obtain new sailors' opinions on:

- Reasons for joining the Navy
- Classification Experience
- Delayed Entry Program (DEP)
- Recruitment Experience



Purpose/Background

- Administrations scheduled quarterly at Recruit Training Command (RTC), Great Lakes for oneweek intervals
 - > Wave 1 Week of November 17, 2008
 - > Wave 2 Week of February 9, 2009
 - > Wave 3 Week of May 11, 2009
 - ➤ Wave 4 Week of August 10, 2009
- Survey administered to recruits online on P-1 Day under supervision of Recruit Quality Assurance Team (RQAT) staff



New Sailor Survey Demographics

FY 09 Total Respondents N = 2718

Male 83%

Female 17%

■ Single 89%

Married 10%

Race/Ethnicity

White	64%

African American or Black 21%

American Indian or Native Alaskan 3%

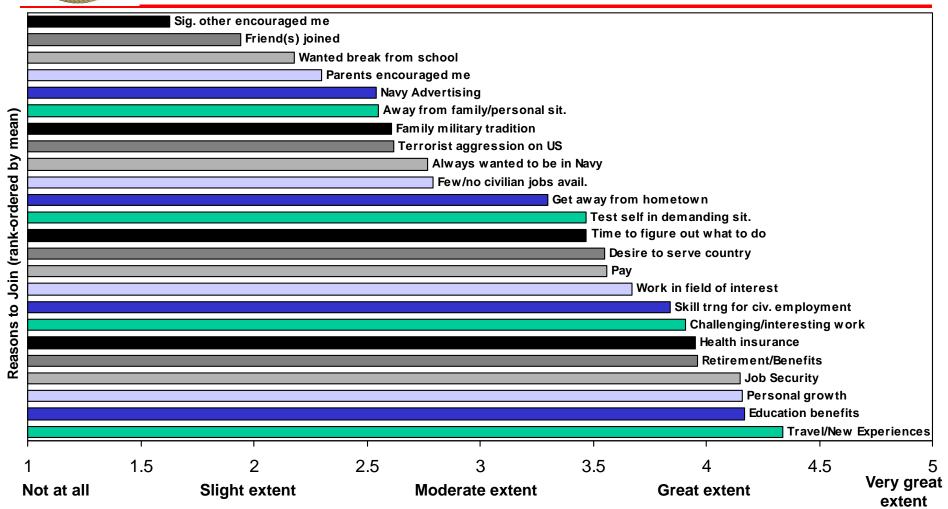
Asian or Pacific Islander 7%

Hispanic16%

Gender and race/ethnicity representation similar to FY08



New Sailor Survey Results Reasons for Joining



The 4 most influential reasons to join remain consistent

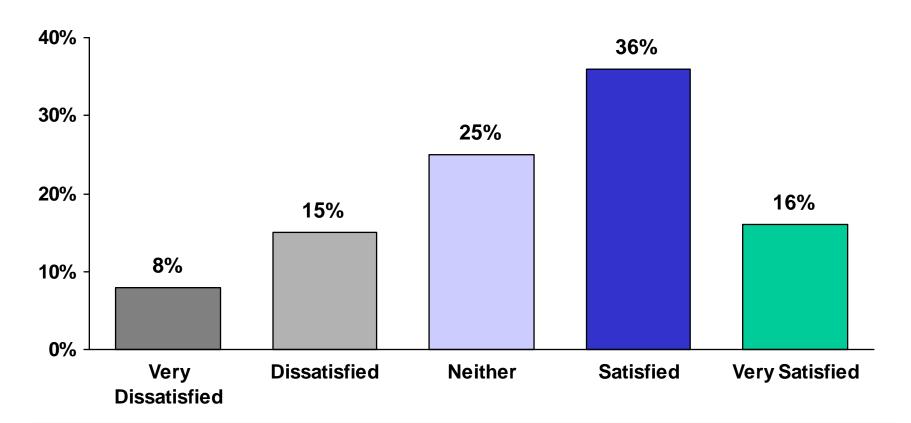
CLASSIFICATION EXPERIENCES





New Sailor Survey Results Classification Experiences

"How satisfied were you with the amount of time you spent with your classifier?"

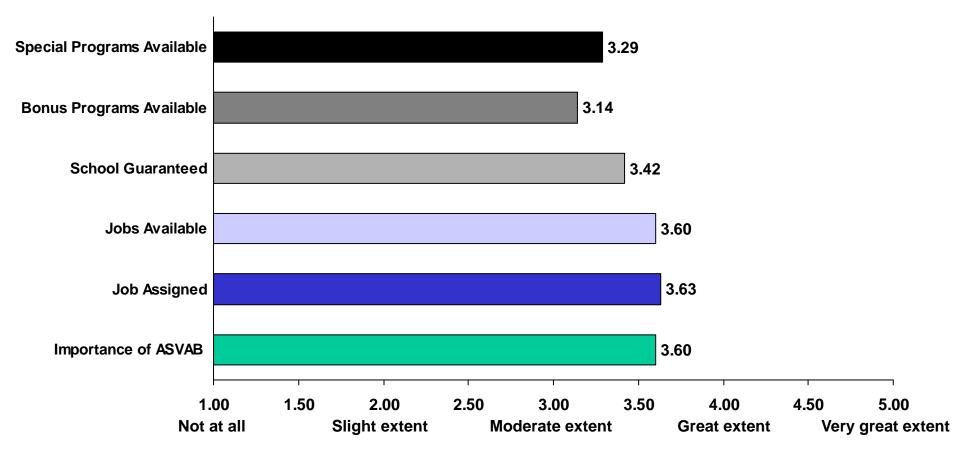


Fewer sailors are satisfied with classification



New Sailor Survey Results Classification Experiences

Respondents were asked "To what extent was each of the following explained to you?"



Classifiers give greater explanation of Jobs than Programs

DEP EXPERIENCES





New Sailor Survey Results DEP Experiences

How long were you in the DEP?					
	FY 09 Totals	FY08 Totals			
0-1 month	10%	14%			
2-3 months	15%	23%			
4-6 months	36%	42%			
7-9 months	27%	13%			
10 or more months	12%	8%			

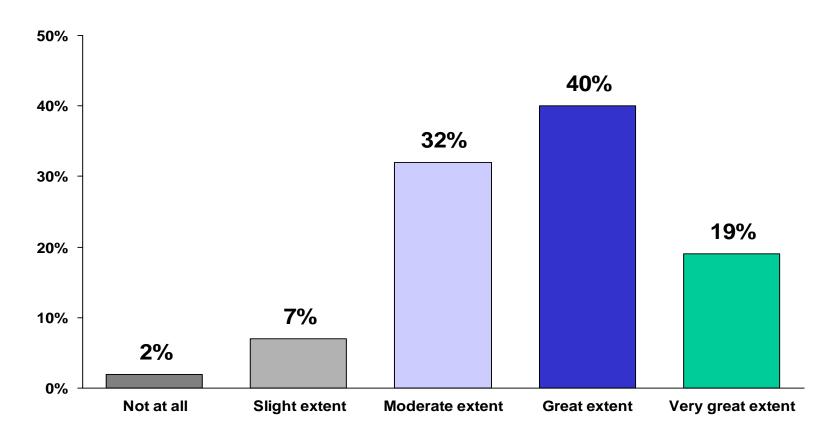
How long were your DEP meetings?					
<u>F</u>	Y 09 Totals	FY08 Totals			
Less than 15 minutes	3%	7%			
15 – 30 minutes	6%	6%			
30 – 60 minutes	27%	22%			
60 – 90 minutes	41%	46%			
> 90 minutes	22 %	22%			

Approximately how many DEP meetings did you attend?				
	FY 09 Totals	FY08 Totals		
None	4%	7%		
1-3	30%	41%		
4-6	35%	32%		
7-9	18%	11%		
10 or more	13%	9%		



New Sailor Survey Results DEP Experiences

"To what extent was the information you received in the DEP accurate?"

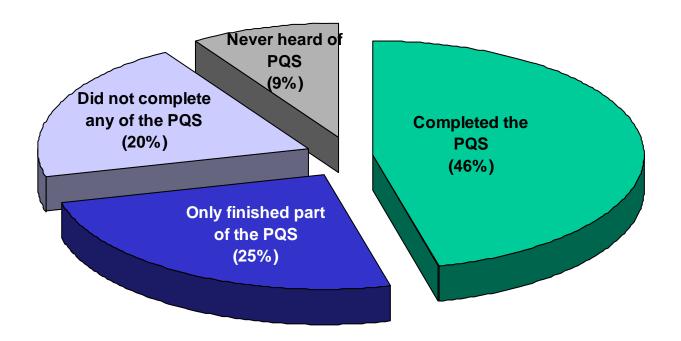


Most recruits getting accurate information in DEP



New Sailor Survey Results DEP Experiences

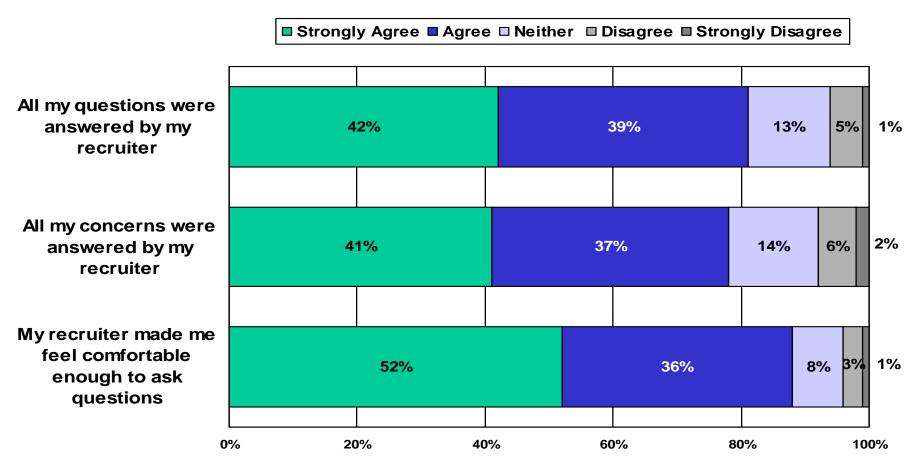
"What progress did you make on DEP Personal Qualification Standards (PQS)?"



RECRUITING EXPERIENCES

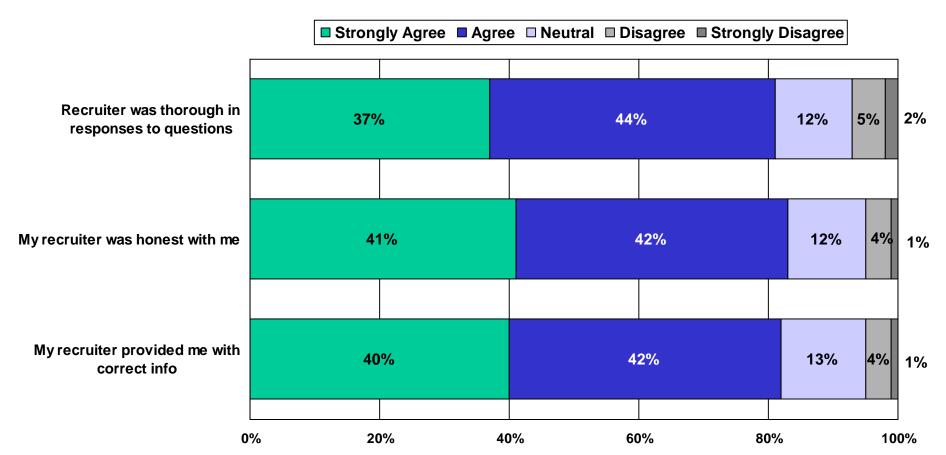






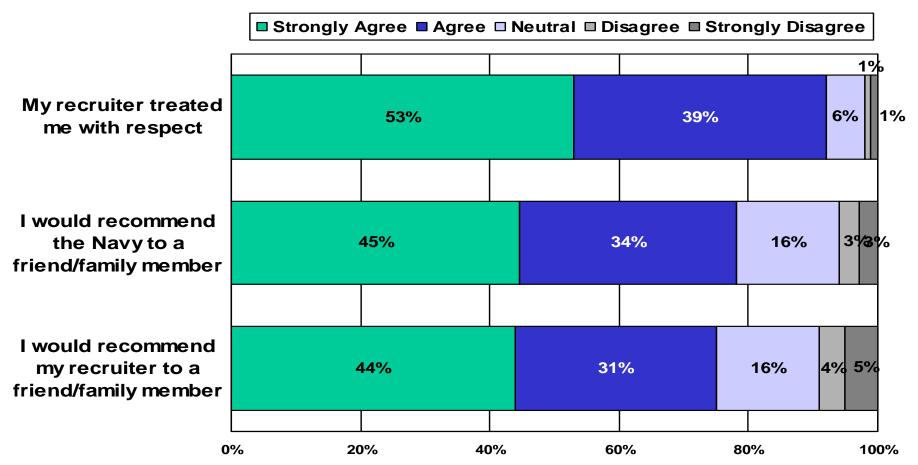
Recruiters addressing recruits' questions and concerns





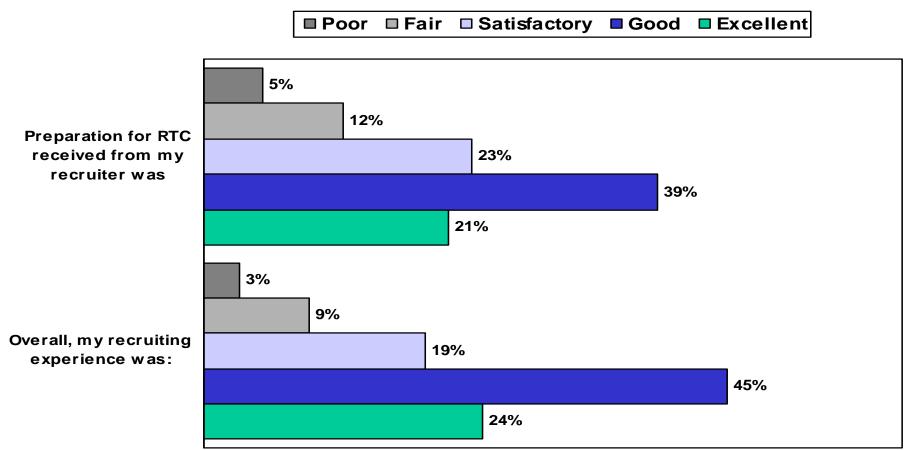
Recruiters providing thorough, honest, and accurate information to recruits





Three out of four recruits would recommend the Navy to a friend





Most recruiters are receiving positive ratings from their recruits





Since FY07 8,471 New Sailor Surveys have been administered by NRC

- Sailors continue to report overall satisfaction with recruiters and DEP
- Sailors are less satisfied with classification
- Factors influencing the decision to join remain fairly consistent
- Navy Recruiting Command will continue quarterly administrations of NSS in FY10

QUESTIONS



BACKUP SLIDES





New Sailor Survey Results Prior contact with military

- New recruits were asked whether any of their family members were currently or have ever served in the military
- Over 70% of new recruits reported at least 1 family member who was currently or previously in the military

Grandparent n = 1387 (51%)

Father n = 861 (32%)

Sibling (brother or sister) n = 416 (15%)

Mother n = 143 (5%)



New Sailor Survey Results DEP Experiences

On average, how many t	times did vou meet with	your recruiter while in DEP?
------------------------	-------------------------	------------------------------

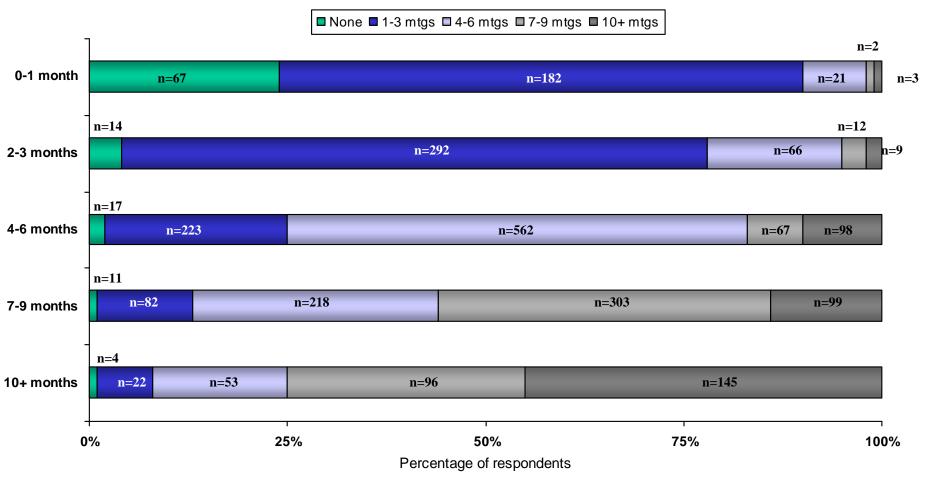
	FY09 Totals	FY08 Totals
Less than once per month	5 %	6%
Once per month	30%	29%
Once every two weeks	31%	32%
Once per week or more	34%	34%

Was the number of contacts with v	your recruiter before coming to RTC?
Trae the manner of contacts that	your rootuitor boroto commig to it io i

	FY09 Totals	FY08 Totals
Too few	19%	20%
About right	78%	77%
Too many	3%	3%
100 many	3%	3%



New Sailor Survey Results Time in DEP by DEP Meetings Attended



Most recruits are attending the expected number of DEP meetings



New Sailor Survey Results Recruiting Experiences

Did your recruiter explain your responsibilities while in the DEP?

FY 2009

Yes 90%

No 5%

I really don't remember if my recruiter did or did not 5%

Did your recruiter meet with your parent(s)?

FY 2009

Yes, once 30%

Yes, more than once 41%

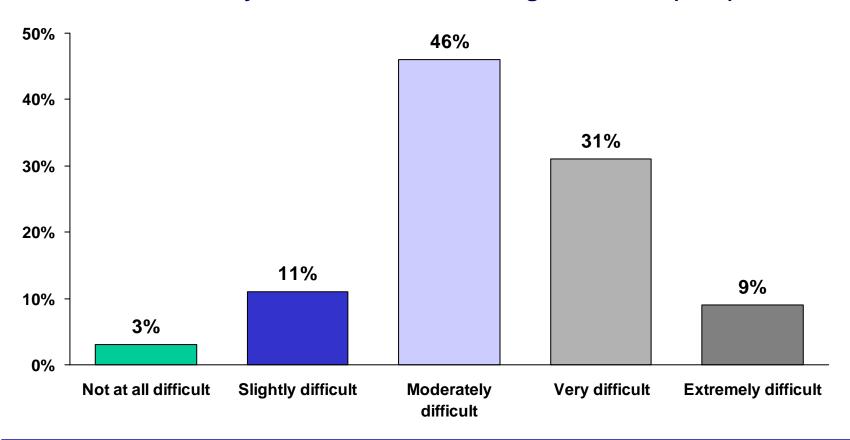
No 15%

NA, parents were not involved with enlistment process 14%



New Sailor Survey Results Boot Camp

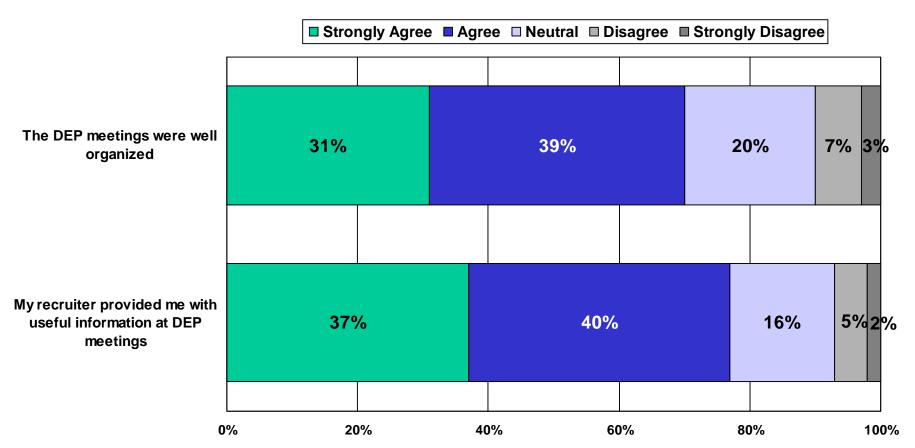
"How difficult do you think Recruit Training Command (RTC) will be?"



Respondents expect similar level of difficulty at RTC compared to FY08



New Sailor Survey Results DEP Experiences

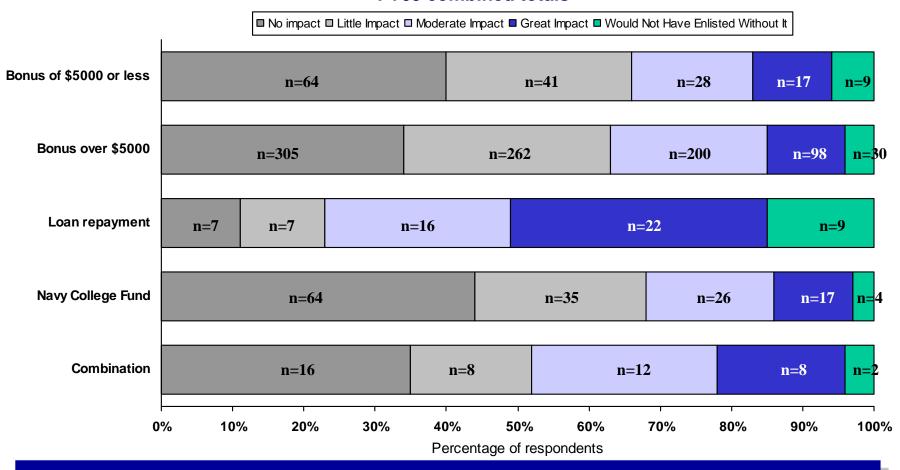


Most recruits found their DEP meetings to be organized and useful



New Sailor Survey FY09 Enlistment Incentives and Impact

Type of Enlistment Incentive Received and Impact of Incentive on Decision to Enlist FY09 combined totals

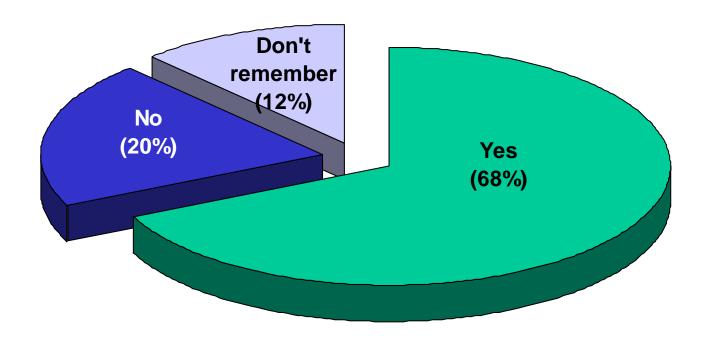


Most incentives did not have much impact on decision to enlist



New Sailor Survey Results Recruiting Experiences

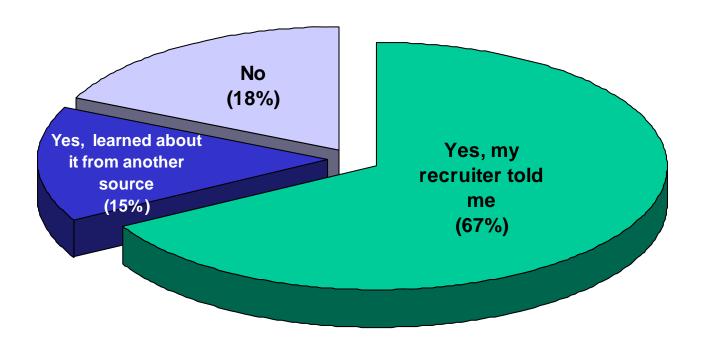
"Did a Navy recruiter show you a comparison of the potential salary and education benefits you could receive by enlisting in the Navy versus working and/or going to school?"





New Sailor Survey Results New GI Bill Awareness

"Were you aware of the changes in benefits in the new GI Bill?"

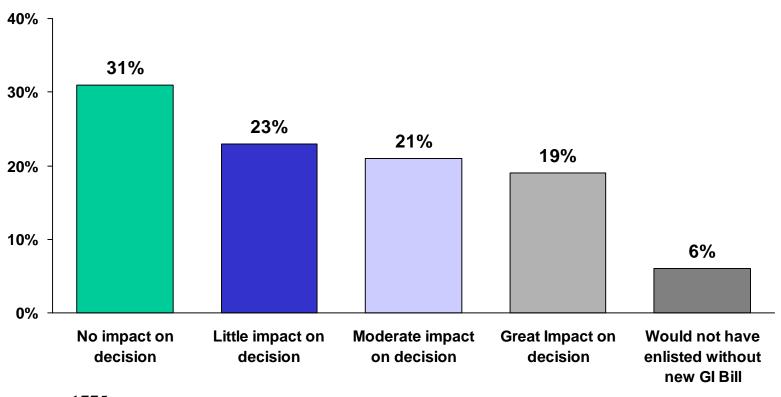


n = 2153



New Sailor Survey Results Impact of New GI Bill

"What impact did the new GI Bill have on your decision to enlist?"



n = 1775

The new GI Bill had little or no impact on over half of new recruits' decision to enlist

Deloitte.

Performance Based Costing at Navy Recruiting Command



Mike Sumrall, Deloitte Consulting LLP

Agenda

- Cost Model Purpose
- Cost Modeling Basics
- Value Streams
- Key model elements
- Model Demonstration

Continuous Performance Improvement

- Focuses the vision to move the enterprise forward
- "Strategy for Our People"
- Necessary for NSPS Support

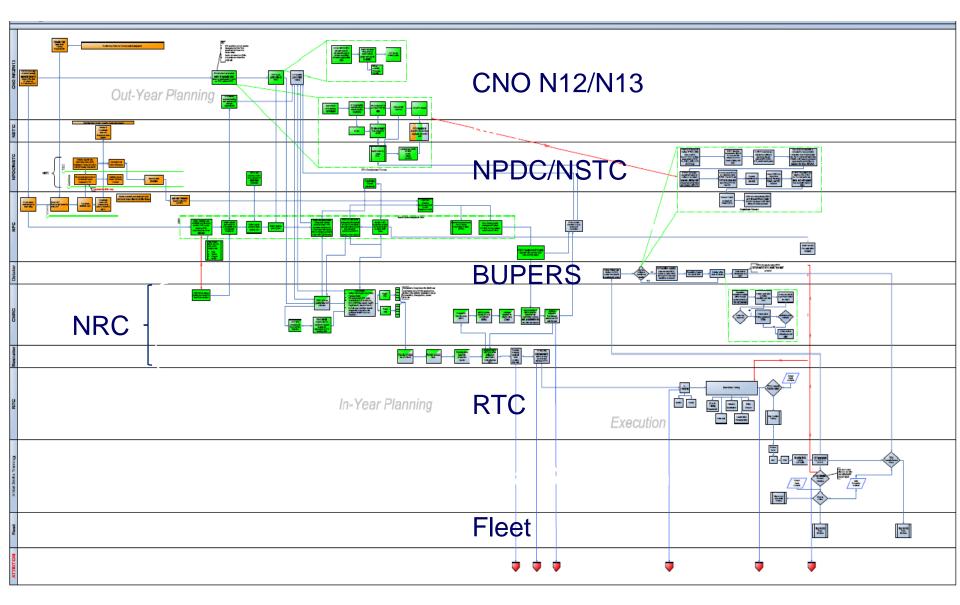
High Performing
Organizations focus on longterm success to produce
exceptional results in
customer service, employee
development, social
responsibility, innovation, and
financial gain



- Strategic significance drives process selection
- Lean Six Sigma is mandated by DoD/SecNav

- Demonstrates accountability and produces results
- Enables evidencebased decision making
- Process Costs provide direction for resource allocation & improvements

MPTE Street-to-Fleet Supply Chain



Performance Based Costing Initiative

Pilot project demonstrated that methodology was capable of capturing the cost of a recruit by enlisted rate and/or officer category

Phase II goals were capture the cost of enlisted and officer applicants and provide additional detail by:

- Gender (enlisted only)
- Quality as expressed by ASVAB score
- Diversity
- Impact of Enlisted DEP attrition and Officer Non-Selects

Model developed to support the five major value streams managed by Navy Recruiting Command.

Navy Recruiting Core Value Streams

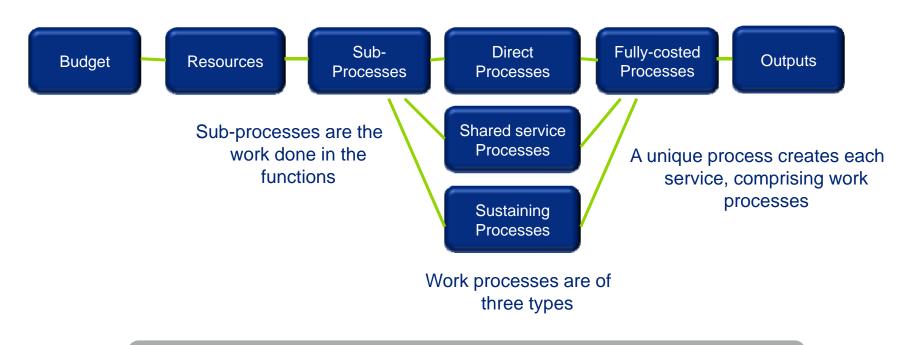
For the purposes of cost modeling and LSS CPI initiatives, NRC supports five core value streams:

- Active Enlisted
- Reserve Enlisted
- Active Officers
- Reserve Officers
- NROTC

The PBC Model flows along these value streams!

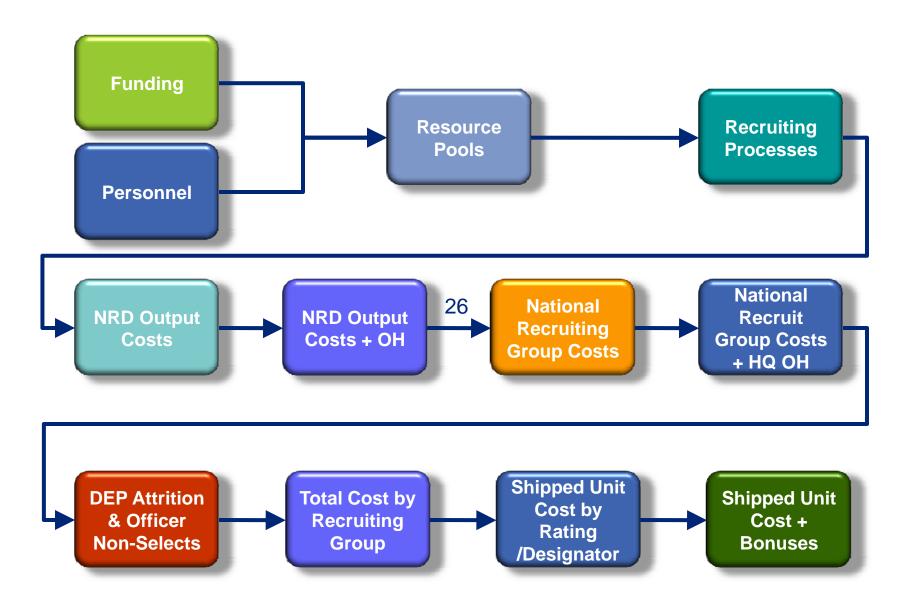
"Process Based" Costing Fundamentals

The "ends" or outputs are first

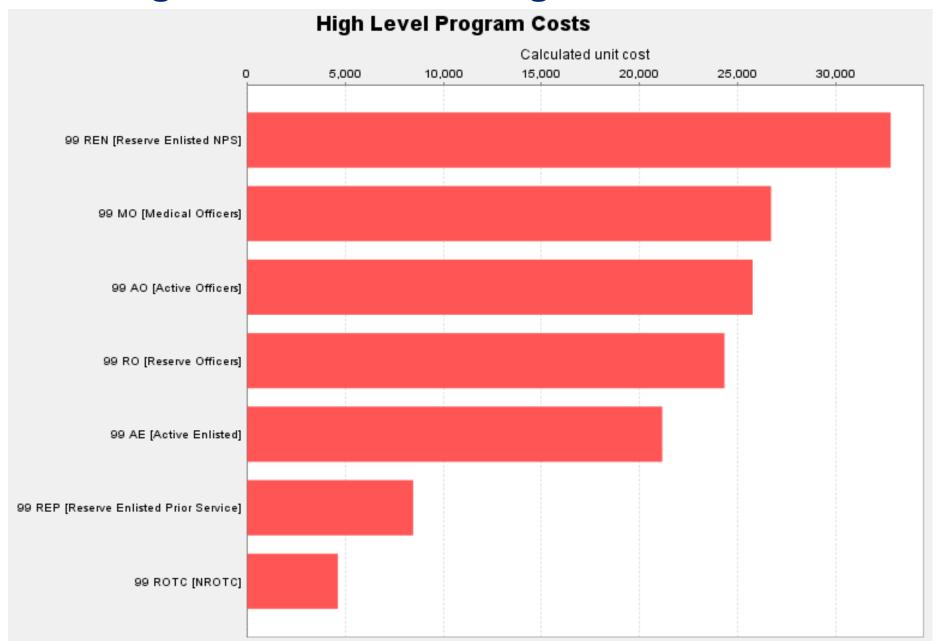


Work "flows" through the model based on output quantity and productivity assumptions

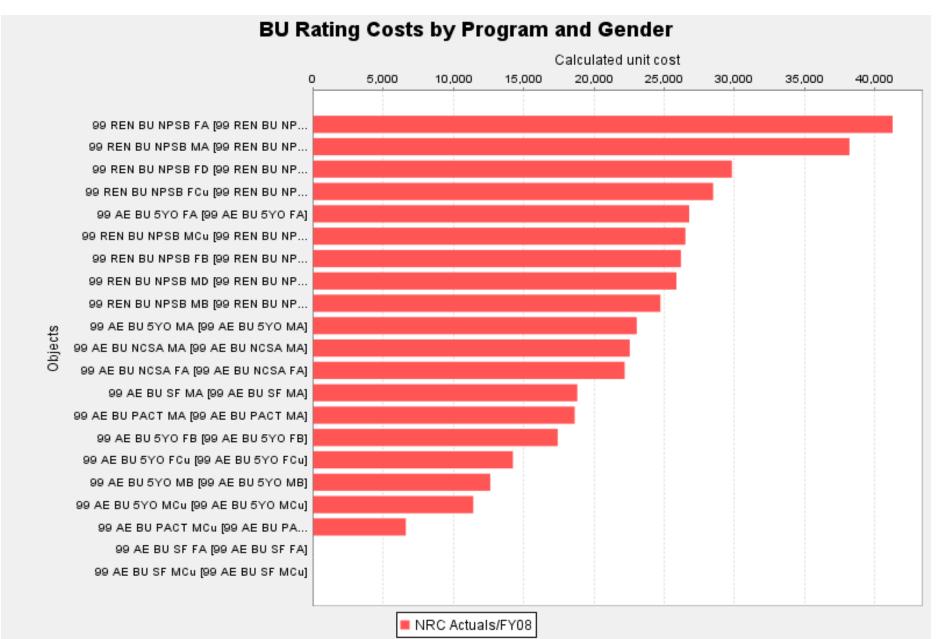
NRC Cost Model Structure



The Big Picture of Recruiting Costs – FY2008



Costs Relative to Gender & Quality



Impact of Quality Costs in FY08

In FY08, NRC achieved 73% UMG against Navy goal of 70%

- DoD minimum is 60%
- Recruiter LOE is significantly higher for UMG as compared to LMG applicants
- A Cells are 8X the LOE of D Cells, B Cells are 3X LOE of D Cell, C Cells and D Cells are at base value of 1
- Leveraging this assumption:

% Quality	Recruiters	Cost
73%	4412	\$309M
70%	4262	\$298
3%	150	\$11M

Impact of Quality Costs in FY08

In FY08, Attrition played a big impact on recruiting costs

DEP Attrition Rate is proportional to time spent in DEP

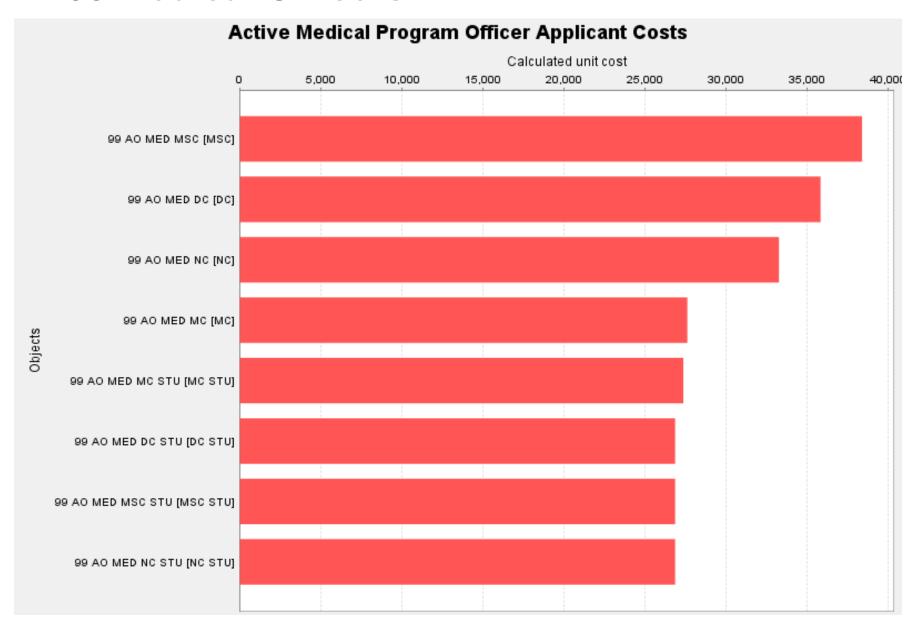
Program	Contracted	Shipped	Attrition %
General Female A	6690	4835	27.7%
General Female B	419	293	30.1%
General Female Cu	3632	2585	28.8%
General Female D	15	9	40.0%
General Male A	22604	18910	16.3%
General Male B	2313	1898	17.9%
General Male Cu	10345	8538	17.5%
General Male D	174	143	17.8%
Nuc Female A	318	240	24.5%
Nuc Male A	2635	2293	13.0%
NSW/NSO Female A	41	26	36.6%
NSW/NSO Female B	3	2	33.3%
NSW/NSO Female Cu	2	2	0.0%
NSW/NSO Male A	2134	1868	12.5%
NSW/NSO Male B	114	98	14.0%
NSW/NSO Male Cu	160	144	10.0%
	51599	41884	

Program	Contracted	Selected	Non-Select %
Active General Officer Students	600	469	21.8%
Active Dental Corps	20	15	25.0%
Active Medical Student	595	474	20.3%
Active Medical Service Corps	144	106	26.4%
Active Medical Corps	13	12	7.7%
Active Nurse Corps	102	85	16.7%
Active General Officers	2358	1365	42.1%
Active Chaplains	116	100	14.1%
Active Chaplain Students	48	45	6.3%
Reserve Medical Corps	265	259	2.3%
Reserve Dental Corps	33	30	8.8%
Reserve Medical Service Corps	34	33	2.8%
Reserve Nurse Corps	95	89	6.3%
Reserve Chaplains	33	30	9.1%
Reserve General Officers	1365	1046	23.4%
	5822	4158	

Impact of Diversity Initiative on Applicant Costs

Program	FY07	FY08
Enlisted Diversity Advertising	\$4.3M	\$22.2M
Officer Diversity Advertising	\$15.1M	\$9.6M
Enlisted Diversity Programs	\$5.7M	\$4.3M
Enlisted Diversity	20,008/40,578 (49.3%)	22,560/41,804 (53.9%)
Enlisted Diversity Applicant Cost	\$318	\$1,132
Officer Diversity	458/2525 (18.1%)	722/3514 (20.4%)
Officer Diversity Applicant Cost	\$40,548	\$14,474

FY08 Medical Officers



NROTC Program

In FY08, NRC achieved 5,494 NROTC Applications

- 5% of recruiting time is allocated to NROTC scholarship season (approx. 2.6 weeks)
- These costs also carry their "fair share" of shared and sustaining costs.

_				-		
	Objects	Relative %	Global %	Relative Costs	Costs/Unit Output	Volume
1	□··· 99 ROTC [NROTC]	100.0%	100.0%	25,500,310.04	4,641.48	5,494.00
2	⊕ ⊕ 90 ROTC [NROTC]	100.0%	100.0%	25,500,310.04	4,641.48	
3	- 6 80 ROTC [NROTC]	100.0%	100.0%	25,500,310.04	4,641.48	
4	- 10 ROTC [NROTC]	100.0%	100.0%	25,500,310.04	4,641.48	
5	⊕··· > 60 ROTC [NROTC]	89.1%	89.1%	22,731,107.30	4,137.44	
6	🖃 🚭 40 HQ 1 [HQ Sustaining]	10.9%	10.9%	2,769,202.74	504.04	
7	→ ∠ 30 HQ N6 [IT & Comms]	36.1%	3.9%	999,888.06	182.00	
8	🚠 🛴 30 HQ NLR [Non-Labor Sustaining]	17.5%	1.9%	484,908.19	88.26	
9	🚠 🛴 30 HQ N3 [N3 Sustaining]	13.1%	1.4%	361,761.36	65.85	
10	🗓 🍒 30 HQ N00 [Executive]	7.1%	0.8%	195,615.08	35.61	
11	🚠 🛴 30 HQ Cyber [Cyberspace]	5.8%	0.6%	160,768.97	29.26	
12	🗓 🍒 30 HQ N1/N4 [Admin/HR & Supply]	4.7%	0.5%	131,460.66	23.93	
13	⊞ 🛴 30 HQ CA [CARIT]	4.1%	0.4%	114,745.53	20.89	
14	🚠 🛴 30 HQ N73 [Trainers Ovhd]	3.9%	0.4%	108,655.09	19.78	
15	🚠 🛴 30 HQ N5 ["Strat, Plans, Analysis"]	2.9%	0.3%	80,016.20	14.56	
16	⊕ 🍒 30 HQ NO [NORU]	2.6%	0.3%	72,774.11	13.25	
17	⊞. 🛴 30 HQ N8 [Comptroller]	2.1%	0.2%	58,609.48	10.67	

The National Cost of a Male Nuc Before Process Losses Applied

	Objects	Relative %	Global %	Relative Costs	Costs/Unit Output	Volume
Fully Costed Nuc	- 60_010_M [E-NUC Males (with OH)]	100.0%	100.0%	38,480,614.75	15,947.21	2,413.00
NRD Direct + G&A/OH	+ 58 E NUC 3 [NRD Costs]	57.9%	57.9%	22,293,805.63	9,239.04	
	+ 58 E NUC 1 [HQ Advertising]	28.2%	28.2%	10,849,403.31	4,496.23	
	- 40 HQ 1 [HQ Sustaining]	8.9%	8.9%	3,405,872.29	1,411.47	
	+ 30 HQ N6 [IT & Comms]	30.5%	2.7%	1,040,225.68	431.09	
	+ 30 HQ NLR [Non-Labor Sustaining]	24.4%	2.2%	832,702.81	345.09	
	+ 30 HQ N00 [Executive]	18.8%	1.7%	641,666.63	265.92	
HQ G&A/OH	+ 30 HQ Cyber [Cyberspace]	6.4%	0.6%	219,194.26	90.84	
	+ 30 HQ CA [CARIT]	5.5%	0.5%	188,932.96	78.30	
	+ 30 HQ N1/N4 [Admin/HR & Supply]	5.5%	0.5%	187,001.32	77.50	
	+ 30 HQ N5 ["Strat, Plans, Analysis"]	3.9%	0.3%	133,596.94	55.37	
	+ 30 HQ N3 [N3 Sustaining]	2.4%	0.2%	83,212.97	34.49	
	+ 30 HQ N8 [Comptroller]	2.3%	0.2%	79,338.73	32.88	
	- 58 E NUC 2 [HQ Direct Enl Nuc]	4.4%	4.4%	1,688,328.35	699.68	
	+ 40 HQ 2224 [Subs Enlisted Program Support]	36.4%	1.6%	614,510.43	254.67	
HQ Direct	+ 40 HQ 2222 [NUC Enlisted Program Support]	36.4%	1.6%	614,510.43	254.67	
	+ 40 HQ N7 [Training/Inspecting]	22.8%	1.0%	384,904.60	159.51	
	+ 40 HQ 2225 [General Enlisted Program Support]	2.6%	0.1%	44,183.98	18.31	
	+ 40 HQ 223 [HQ Enlisted Processing]	1.8%	0.1%	30,218.91	12.52	
	- 58 E NUC 4 [Region Program Support]	0.4%	0.4%	154,524.14	64.04	
	+ 40 RW 21 [West Training]	30.4%	0.1%	46,922.73	19.45	
	+ 40 RE 21 [East Training]	29.7%	0.1%	45,843.09	19.00	
	+ 40 RE 17 [East Classifying]	20.2%	0.1%	31,150.58	12.91	
	+ 40 RW 17 [West Classifying]	19.8%	0.1%	30,607.74	12.68	
Region Direct + G&A/OH	- 40 RW 2 [Region West Sustaining]	0.1%	0.1%	45,345.69	18.79	
	+ 30 RW 22 [Region West Non-Labor Sustaining]	65.9%	0.1%	29,874.34	12.38	
	+ 30 RW 23 [Region West Executive]	22.0%	0.0%	9,997.07	4.14	
	+ 30 RW 24 [Region West Diversity]	12.1%	0.0%	5,474.28	2.27	
16 Footer	+ 40 RE 2 [Region East Sustaining]	0.1%	0.1%	43,335.33	17.96	
10 FUOLEI			Copyright ©	2009 Deloitte Developme	nt LLC. All rights rese	rved.

Use Model to Assess Process Improvement Initiatives

Model Allows Us To Test Effectiveness and Cost Savings from Specific **Productivity Improvement Projects**

Example: CNRC Process Improvement Team reduced PS reserve enlisted kit paperwork from 23 to 9 forms (61%)

Estimated time savings from improvement is

Equates to saving or 21 FTEs per year

Potentially increases Prior Service PPR from .85 to .88

Quick process improvement analysis & validation

Identifies Capacity Issues - Classifier Quick Look

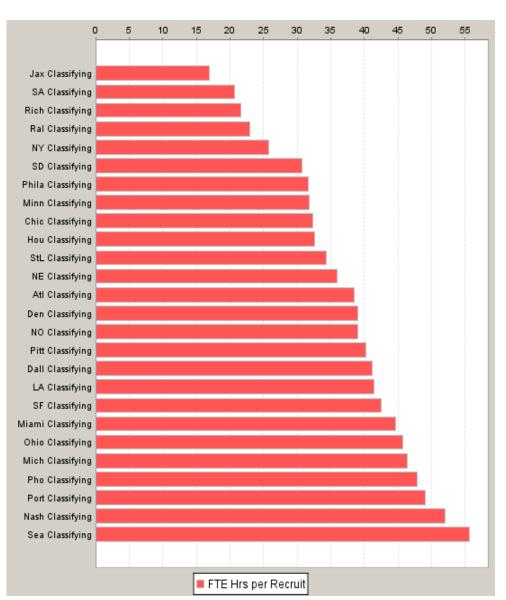
Opportunity for benchmarking, personnel optimization and team reorganization

Classifiers spend an average of 1.25 hours per applicant

Number assigned ranges from 3 to 11 per NRD

SEA classifier capacity was 56 hours per recruit, JAX was 17 hours per recruit

JAX	3	HOU	6	SEA	8
SA	3	STL	6	PITT	8
NY	4	CHI	6	MIA	8
RICH	4	PORT	6	NASH	8
NO	4	ATL	6	DAL	9
DEN	5	SD	7	LA	9
RAL	5	NE	7	MICH	10
PHIL	5	SF	7	ОНЮ	11
MINN	5	PHO	7		



Deloitte.

Mike Sumrall, LSSMBB, PMP®

Senior Manager

Deloitte Consulting, LLP

msumralljr@deloitte.com

901-283-3303

Backup

- Active Duty Enlisted Recruiting time is consumed by three principle activities:
 - Recruiting 85% of available recruiting time is consumed by traditional recruiting activities for Active Enlisted and NAT mission (hunting and farming)
 - DEP Management All AC recruiters are involved in DEP Management process and they spend an average 4 hours per month per "DEP-per"
 - Per the AMD there is at least one full-time DEP program manager per NRD
 - NROTC All AC recruiters are involved in promoting NROTC and generating NROTC applications which consume a total of 5% of the available recruiting time.
 - There is at least one full-time DEP program manager per NRD
- Reserve Enlisted Recruiting time is consumed only by traditional reserve recruiting activities

- Enlisted Recruiter Level of Effort
 - All recruits are not created equal
 - High Quality Enlisted applicants require a higher level of effort.
 - Assumption based on study performed by NRC and CNA several years ago which assigns a ratio to the population of the target market as compared to the recruitable market. Early work indicated a much larger disparity between M and F which CNA states has largely subsided.
 - Additionally, high quality recruits have more life opportunities which increase the level of difficulty in recruiting.

Group	Code	A-Cell Equivalents	LOECAT
A-Cell	MA/FA	1	8
B-Cell	MB/FB	3	3
Cu-Cell	MCu/FCu	8	1
Cl-Cell	MCI/FCI	8	1
D-Cell	MD/FD	8	1

- Officer Recruiting Labor Categories
 - Officer Recruiters are divided into three groups General Officer Recruiters, Medical Recruiters, and Reserve Recruiters
 - General Officer recruiters focus on all active, non-medical officer categories
 - Medical Officer recruiters recruit for all active and reserve medical programs
 - Reserve Officer recruiters recruit all PS reservists
 - Where officers are assigned to particular applicant groups, those officers recruit to only those applicant groups (Chaplains and Nucs)
- Officer Recruiter Level of Effort
 - Student programs are 3 times easier to recruit to that direct commission programs. These values are adjustable in the model dashboard.

- Cost of Military Personnel
 - Military personnel salaries were derived from the the annual DoD composite rate
 - The "Annual Department of Defense (DoD) Composite Rate" shall be used when determining the cost of military personnel for budget/management studies
 - Salaries include the following military personnel appropriation costs:
 - Average basic pay plus retired pay accrual
 - MERHC accrual
 - Basic Allowance for Housing (BAH)
 - Basic Allowance for Subsistence (BAS)
 - Incentive and Special Pays
 - Permanent Change of Station (PCS) expenses, and
 - miscellaneous pay which includes a per capita normal cost of \$5,560 for MERHC accrual

- Cost of Civilian Personnel
 - Civilian personnel salaries were derived from the U.S Office of Personnel Management pay tables.
 - Salaries for General Series (GS) were calculated at the Rest of US rates and included annual fringe benefit % increase
 - NSPS pay calculated at the payband average [(min + max)/2]
 - Salary information established the percentage and actual ledger entries were used to pull actual dollars spent
 - All applicable ledger expenses consumed (PCS, Holiday, Sick Leave, Fringe, etc.)
- Cost of Contractor Personnel
 - The contract values recorded in the General Ledger were used to support program costs.
 - Example: Seal Mentors all payments made to the support contract were aligned to the Seal Mentoring Process and consumed by the field and HQ Seal mentor contractors.

Advertising

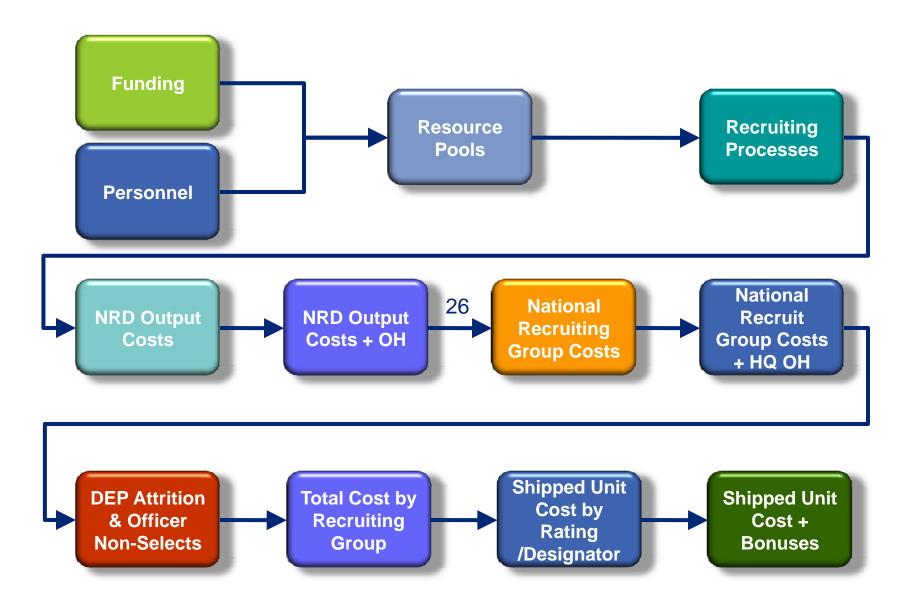
- Advertising costs for General Awareness are applied to all applicant categories - Active & Reserve, Officer & Enlisted
- General Enlisted Advertising is applied to only active enlisted applicants
- General Officer Advertising is applied to only active officer applicants
- Reserve Enlisted Advertising is applied to only reserve enlisted applicants
- Reserve Officer and Medical Officer Advertising is applied to those two groups in proportion to the volume recruited
- Advertising for specific programs are applied only to the designated program – SEAL, EOD/ND, WIN-R, Medical Officers
- Diversity advertising is applied only to applicants coded as diverse in their respective tracking system.

26

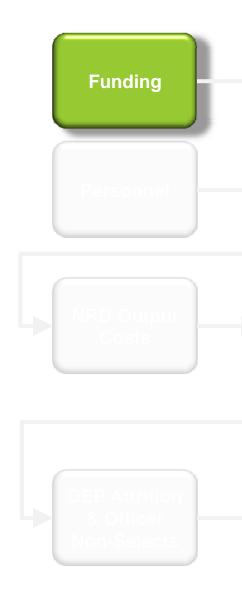
Key Assumptions Used in the Model

Program Costs

- Specific Officer and Enlisted program costs are assigned only to their respective programs
- Diversity program costs are consumed by diverse applicants in proportion to the recruited volume.



Model Structure - Funding



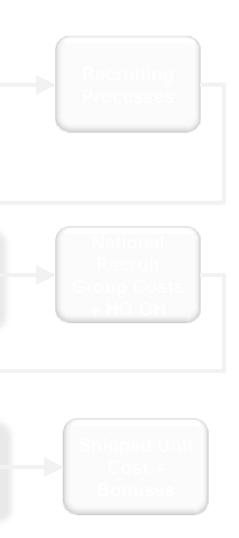
Funding captures: External Funds

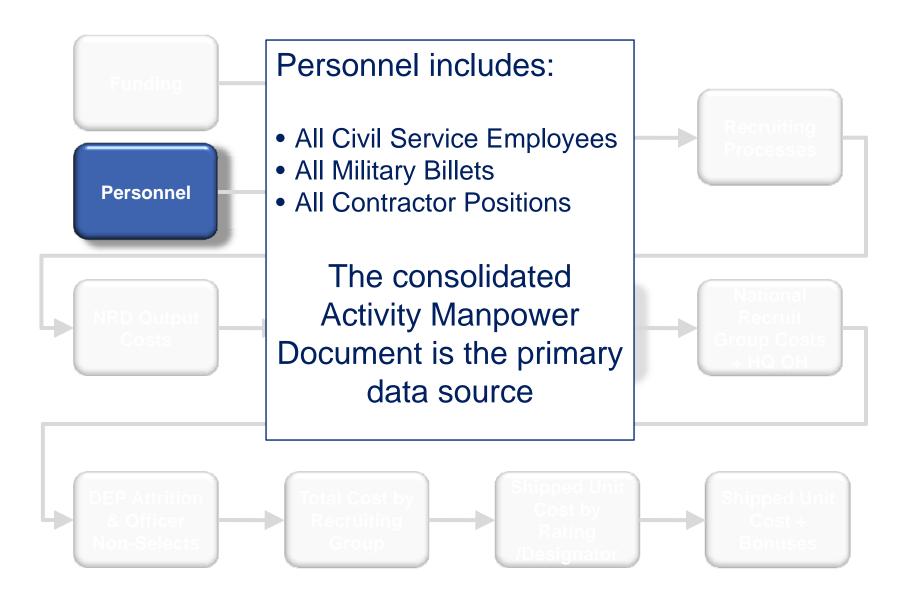
- NMCI
- Enlistment Bonuses
- Loan Repayment Program
- Navy College Fund
- MPN & RPN Equivalent Funds

Internal Funds

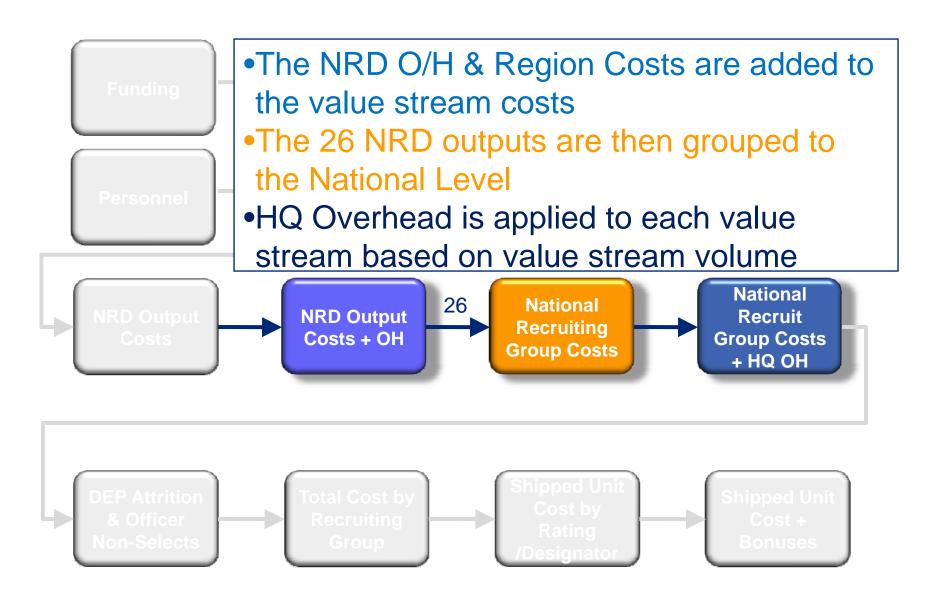
- Civilian Labor
- Advertising
- All other budget lines

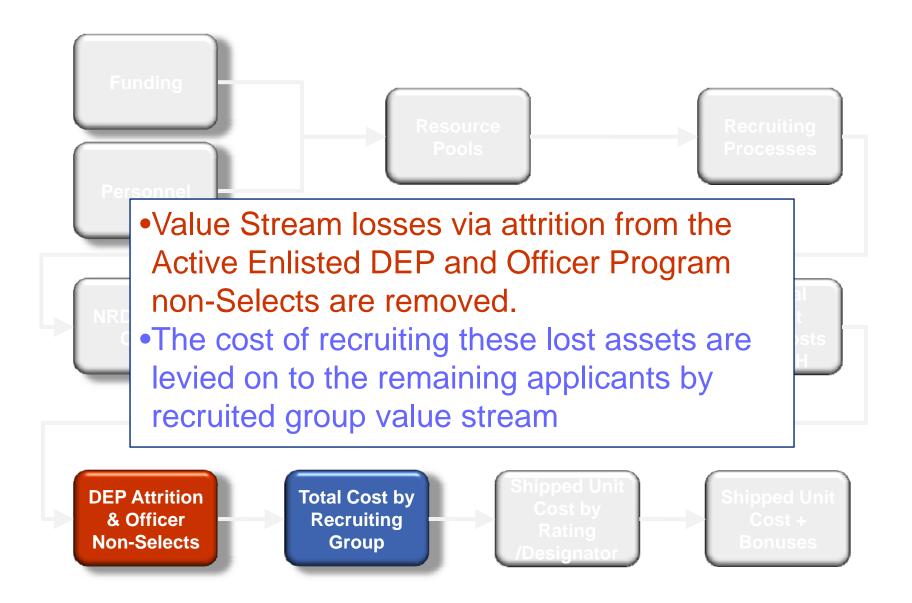
Does not capture facility costs below NRD level













Deloitte.

Mike Sumrall
Senior Manager
Deloitte Consulting, LLP
msumralljr@deloitte.com
901-283-3303





Enhancing Officer Selection and Assignment

Presented to:

The Army Accessions Research Consortium

Hampton, VA

1-3 September 2009

Presented by:

Dr. Robert Kilcullen
U.S. Army Research Institute



Army Need



- Army must maintain the quality and quantity of officers to meet force and mission requirements
- Challenges include:
 - Increases in Army end strength
 - Army organization redesign
 - Current shortages of junior officers
 - CPTs, 2000; MAJs, 3000
 - Strength at 83% of authorization
 - Shortages necessitate the promotion of nearly all junior officers and raise concerns regarding
 - Maintenance of officer readiness & quality
 - Ability to fill critical slots



Officer Research Program



- Project Goal: Develop/validate/implement officer selection tests promoting:
 - Junior officer performance
 - Senior leader potential
 - Army career continuance
- Leverage prior and current officer research
- Results to date suggest that new measures can predict continuance and performance above and beyond cognitive-oriented assessments currently in use



Officer Research Program: Stages



Stage One:

- Address immediate issues in specific pre-commissioning programs, focusing on outcomes in training
 - ROTC 4-year scholarship selection
 - Improved OCS selection

- Stage Two: Comprehensive program to develop holistic officer selection program
 - Incorporates link to on-the-job success and long-term career continuance as well as success in training
 - Incorporates a broader array of officer potential measures



Stage One: ROTC Scholarship Selection

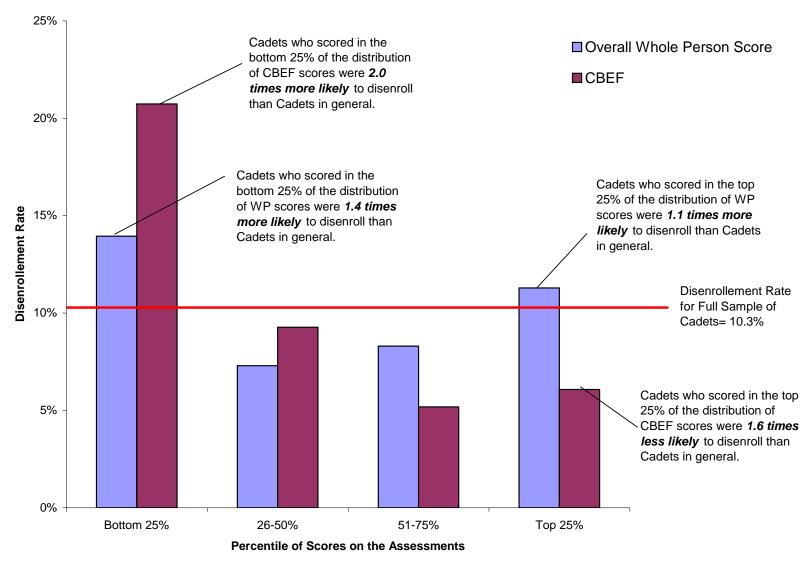


- Objectives: develop new measures for selecting 4-year scholarship cadets that:
 - Complete ROTC and become commissioned officers
- Developed the Cadet Background & Experience Form (CBEF) to predict ROTC program continuation
 - Assessed temperaments thought to be related to disenrollment
 - Need for Achievement
 - Army Identification
 - Stress Tolerance
- Collected data in FY07 to assess the potential of the CBEF
 - Administered test to approximately 1,000 Freshman 4-year scholarship cadets
 - Tracked cadets from freshman to sophomore year
 - Examined relationship between Whole Person Score (WPS), CBEF scores, and program disenrollment



Comparison of WPS and CBEF for Predicting ROTC Disenrollment







Other ROTC Validity Results



- Self-rated likelihood of becoming an officer is a good proxy for disenrollment
 - 94% reporting themselves as 'likely to become an officer' continued into their sophomore year
 - 73% of those reporting themselves as 'unlikely to become an officer' actually disenrolled
- CBEF scores were highly related to self-rated likelihood of becoming an officer and making the Army a career
 - Becoming an Officer (r = .42)
 - Making Army a Career (r = .35)
- CBEF not redundant with WPS
 - CBEF scores show little relation with overall WPS (r = -.06 to .15)



ROTC – Future Research



- CBEF shows promise for identifying 4-year scholarship cadets with stronger propensities for ROTC program completion and service continuance
- What we don't yet know: how well the CBEF works when administered to applicants
- Next step: Validate CBEF under operational conditions
 - Administer test to applicants, track initial program enrollment and subsequent disenrollment into sophomore year, re-evaluate validity of test for predicting program continuation
- CBEF is being integrated into the ROTC scholarship application website in SEP 09



ROTC Timeline



SEP 09	CBEF fully integrated with web scholarship application process for AY 10–11 applicants
SEP 10	Determine validity of CBEF for predicting scholarship acceptance
DEC 10	Determine validity for predicting ROTC program entry for AY 10-11 applicants
DEC 11	Determine validity for predicting ROTC progression from program entry to sophomore year for AY 10-11 applicants
DEC 14	Determine validity for predicting ROTC program completion for AY 10-11 applicants



Stage One: OCS Research



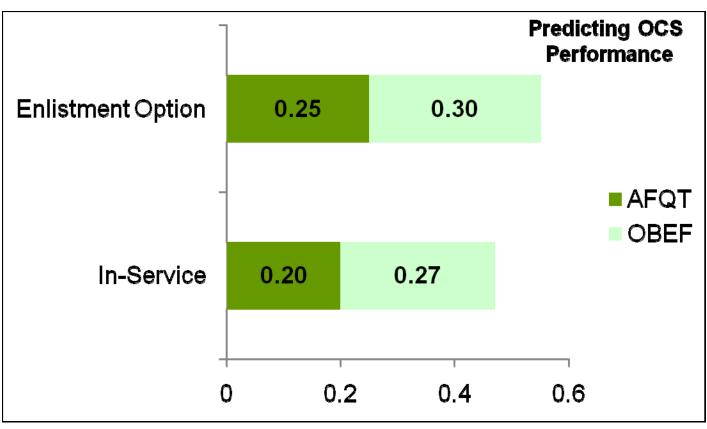
- Objectives: develop measures for selecting OCS candidates most likely to:
 - Perform well in OCS
 - Stay in the Army
- Developed the Officer Background & Experience Form (OBEF)
 - Assessed temperaments thought to predict OCS performance and willingness to make the Army a career
 - Some scales overlap with the ROTC measure, but each test has unique scales targeted to its particular population
- Collected data in FY08/09 to assess the potential of the OBEF
 - Administered test to 1,344 OCS candidates during the first week of OCS
 - Used end-of-course Order of Merit List as measure of performance
 - Used self-report career intentions as proxy for career continuance
 - Analyzed whether OBEF added value to AFQT in predicting outcome measures



OCS Research: Performance



OCS Candidates:



The OBEF adds value to AFQT for predicting OCS performance for both types of candidates.

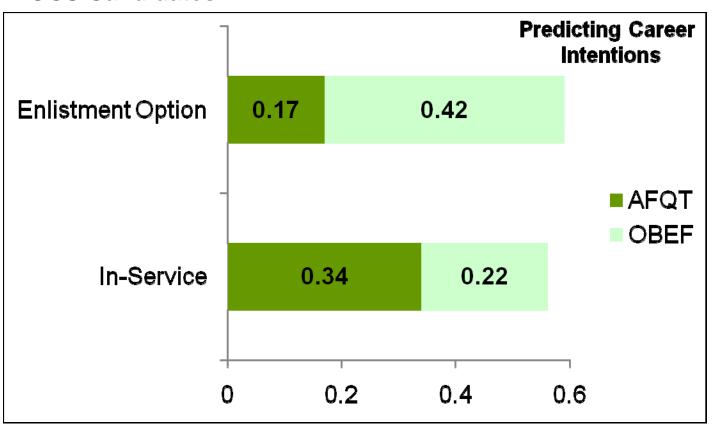
Reports AFQT baseline validities (r), and OBEF incremental validities; i.e., figures in the bars reflect the strength the AFQT and the OBEF in predicting the outcome.



OCS Research: Career Intentions



OCS Candidates:



The OBEF adds value to AFQT for predicting OCS career intentions for both types of candidates.

Reports AFQT baseline validities (r), and OBEF incremental validities; i.e., figures in the bars reflect the strength the AFQT and the OBEF in predicting the outcome.



Stage Two: Long-term Continuance



- Longitudinal databases for examining long-term career continuance and advancement
 - 1993: MRI Officer Research Study
 - 1,807 officers, from 2LT to COL
 - Assessments include: cognitive abilities, complex problem solving skills, creative thinking skills, temperaments, social judgment, leadership knowledge
 - 1994: Army War College Research
 - 184 officers at AWC
 - Assessments include: 360-degree ratings, cognitive complexity, cognitive ability, temperaments
 - Criterion: advancement to GO
 - 1994: BOLDS (Baseline Officer Longitudinal Development Study)
 - 883 West Point Cadets from Class of 1998
 - Assessments include: cognitive aptitude, complex problem solving skills, tacit knowledge, temperaments, physical fitness, leadership style



Stage Two: Milestones for Predicting Job Performance



Officer Job Analysis

- Describe can-do and will-do performance requirements for selected ranks and branches
- Identify individual attributes (KSAOs) as potential predictors of technical & motivational performance
 - Initial performance / senior leader potential
 - Career continuance
- Projected completion: FY10 Qtr 4

Officer Outcome Measures

- Use multi-method approach to measure
 - Current performance
 - Senior leader potential
 - Career continuance
- Metrics may include
 - Supervisor, peer, subordinate ratings
 - Training performance, completion
 - Job Knowledge
 - Career intentions, length of service
 - Promotion rate, awards, demerits
- Projected completion: FY11 Qtr 4

Officer Predictor Battery

- Analyze historical data to identify promising measures
- Evaluate suitability of new ARI measures to predict officer performance and continuance
- Provide preliminary predictor battery and database for validation analyses
- Projected completion: FY11 Qtr 3

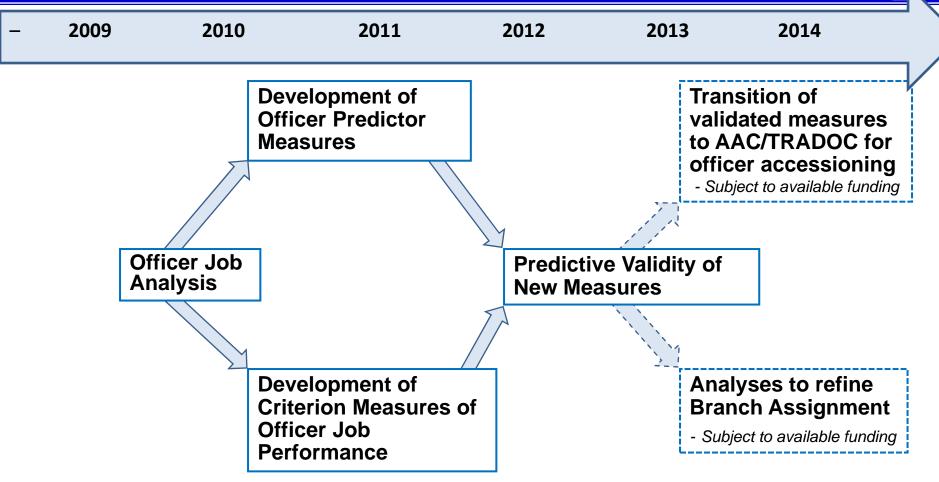
Officer Selection Battery Validation

- Evaluate validity of tests for predicting (across command level) outcome measures
- Incorporate concurrent and longitudinal validation designs
- Conduct preliminary branch assignment analyses
- Projected completion: FY13 Qtr 2



Officer Selection Program: Stage Two





Final Products

- Specification of officer performance requirements across rank & branch
- Validated tests for officer candidate selection and branch assignment

The Effects of Changes in Institutional Policies and Socio-cultural Factors on Initial Entry Physical Fitness Levels of Cadets at the United States Military Academy





Whitfield B. East, EdD Department of Physical Education







Agenda

- Historical Trends in Physical Fitness
- Initial Entry APFT Performance for USMA Cadets (1992 – 2009)
- Development/Impact of the Candidate Fitness Assessment and other Policy Changes on IET Performance/Attrition





"The declining level of youth fitness is rapidly becoming a national security issue."

LTG Dennis D. Cavin, Accession Research Symposium Fort Jackson, SC - January, 2004





Historical Overview

Over the past 100 years the United States has experienced three cycles/eras of physical fitness development.

- World War Era (1915 1950)
- Cold War Era (1950 1983)
- GWOT Era (1983 present)



FM 21-20 (Physical Fitness Training); p. 1(1946)

War places a great premium upon the strength, stamina, agility, and coordination of the soldier ...

- march, run, or crawl long distances
- jump in/out of trenches and over obstacles
- lift and carry heavy objects
- keep going for many hours without rest and sleep

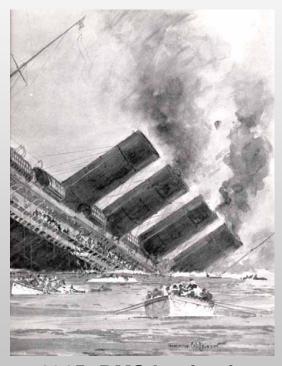
All these activities require superbly conditioned troops...





World War Era (1915 – 1950)

Trigger Event



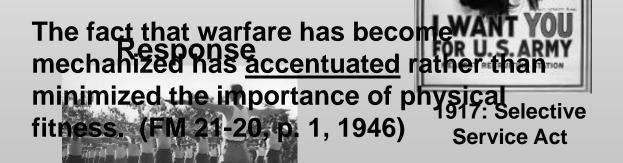
1915: RMS Lusitania

Catalyzing Events



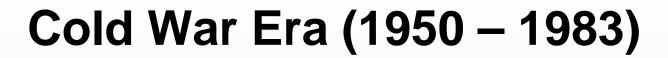
1915: Mechanized armor

Mitigating Factor



Army Physical Training/Testing







Trigger Event



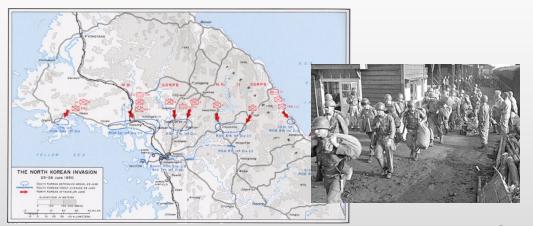
1950: Ethel and Julius Rosenberg



Cold War Era (1950 – 1983)



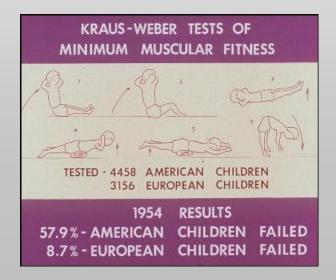
"Catalyzing Events"



1950: Task Force Smith



1954: Joseph McCarthy





1957: Sputnik



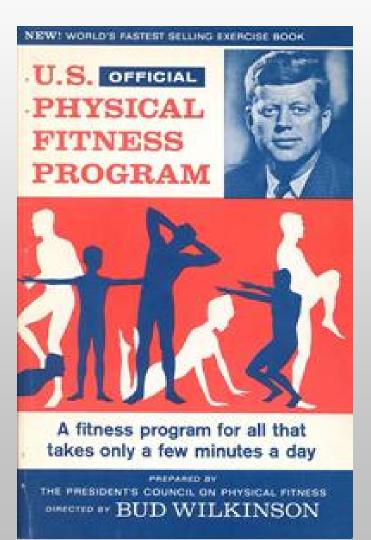
Cold War Era (1950 – 1983) Response



1956: President's Council on Youth Fitness









GWOT Era (1983 - ????)



Catalyzing Event





1983: Marine Barracks Bombing Beirut, Lebanon



2001: WTC Towers

Response



Mitigating Factor



2007: Globesity epidemic



Problem: new cadets/recruits often lack requisite levels of:

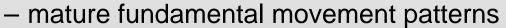




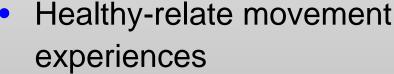


- cardio-respiratory fitness
- core body strength
- upper body strength/weight





motor fitness



- adaptive impact experiences
- adaptive immune response









Historical Factors Affecting Initial Physical Performance

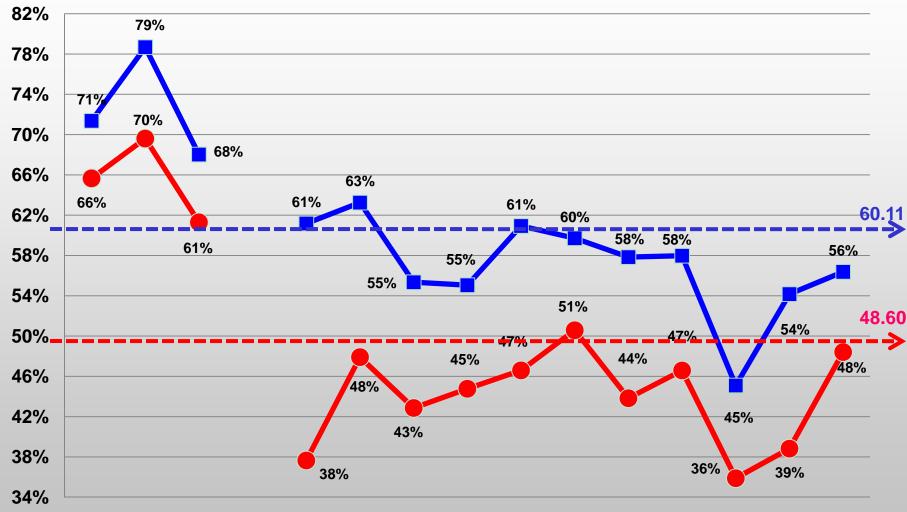


- Changes in Physical Aptitude Exam (PAE)
 Administration
 - centralized to mail-out
- Socio/political events
 - **9-11**
 - economy
- Change to the Candidate Fitness Assessment (CFA) test
 - change to the CFA test administration



APFT Pass Rates by Gender



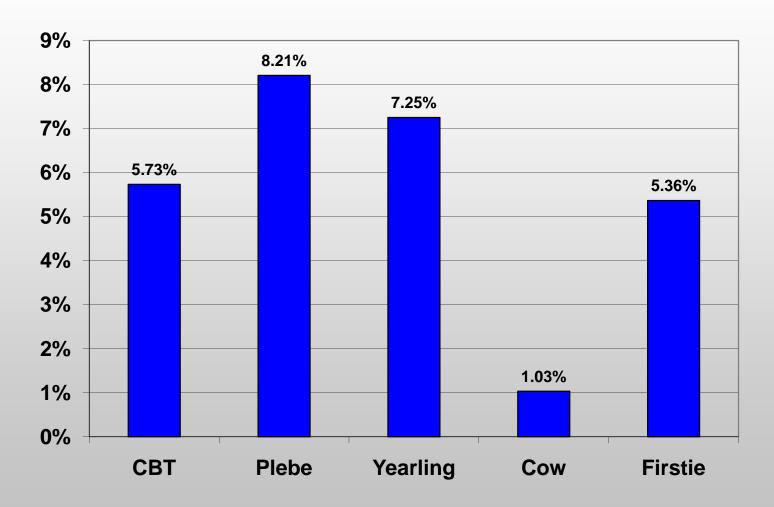


1992 1993 1994 95-98 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009





USMA Attrition



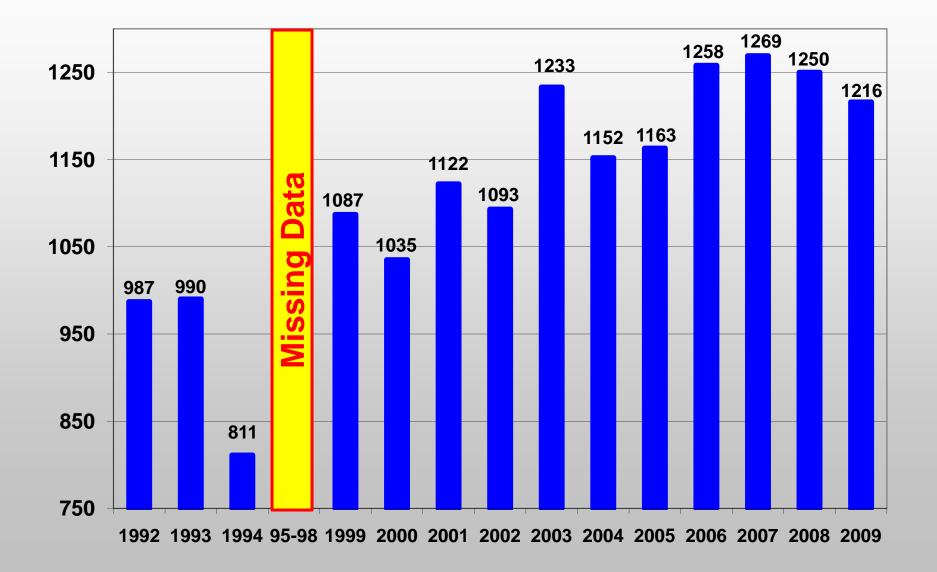
Average 4-yr Attrition = 27.59%

20-yr Commissioning Rate = 72.6%



New Cadets - Valid APFT



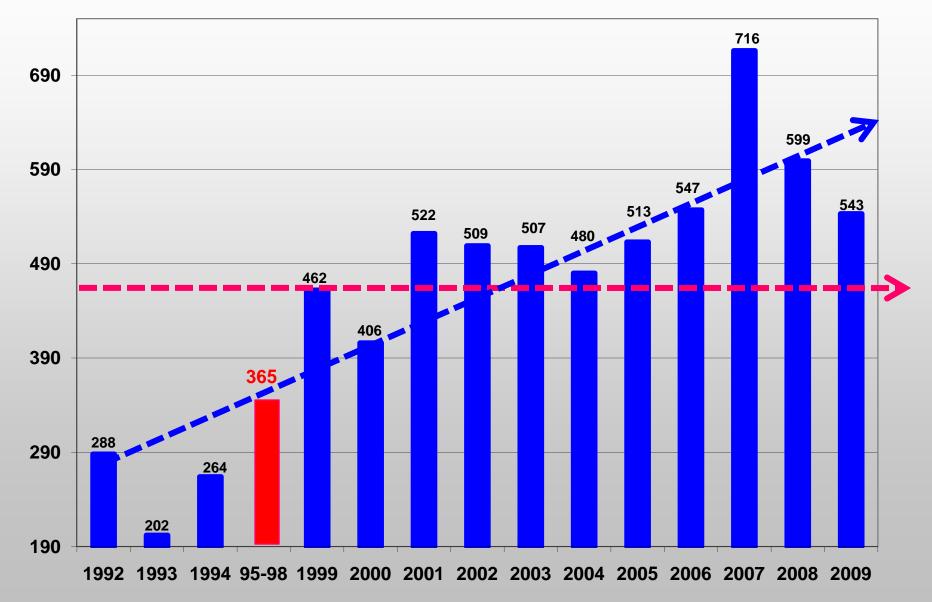




USMA - Cadet Basic Training

Week 1 APFT Failures



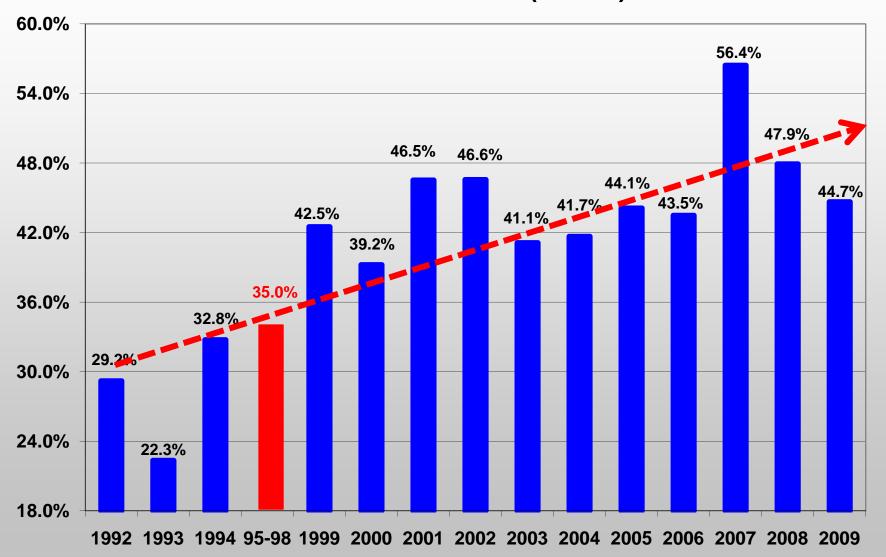




USMA - Cadet Basic Training



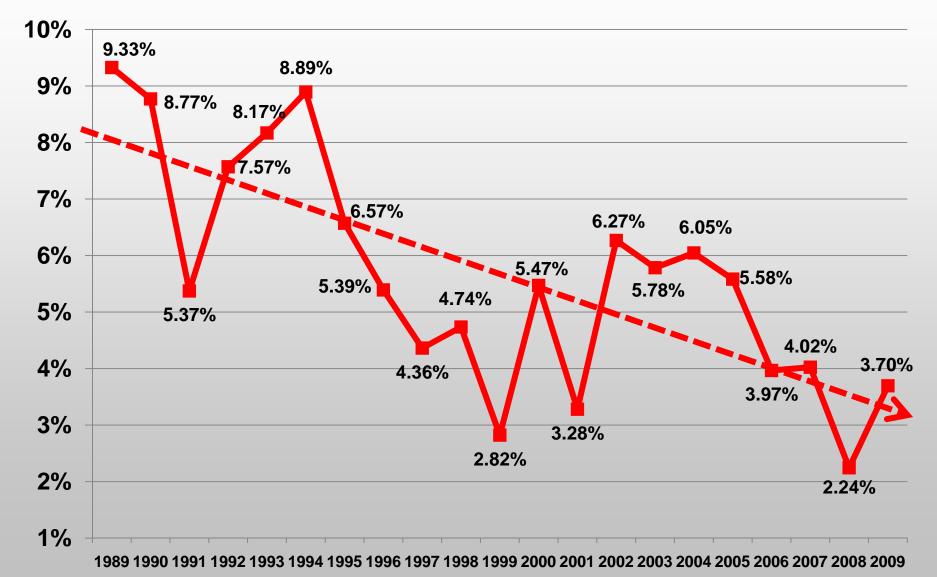
Week 1 APFT Failures (60/180)





CBT Attrition Averages

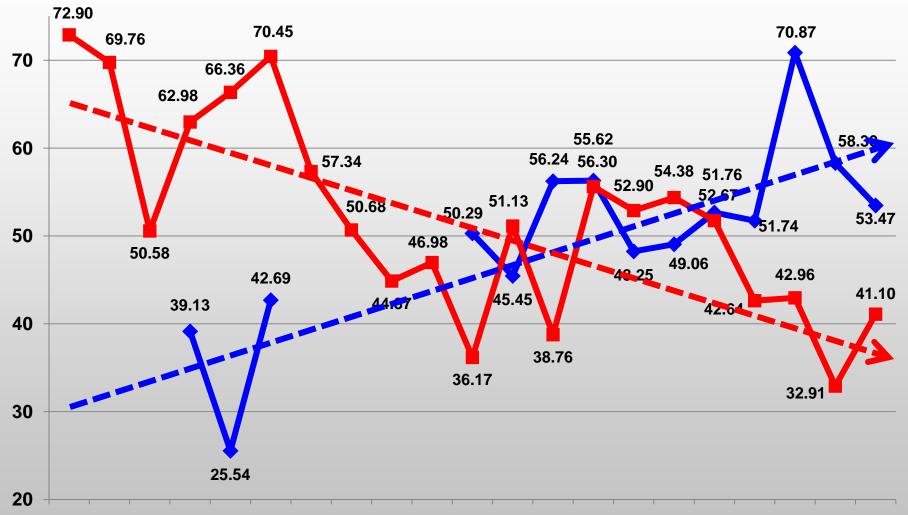






CBT Attrition v. APFT Failures



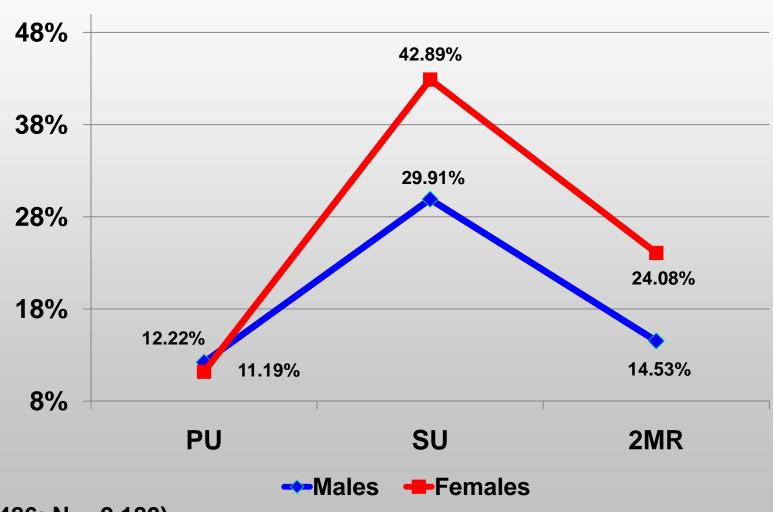


1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009





Event Failures Rates

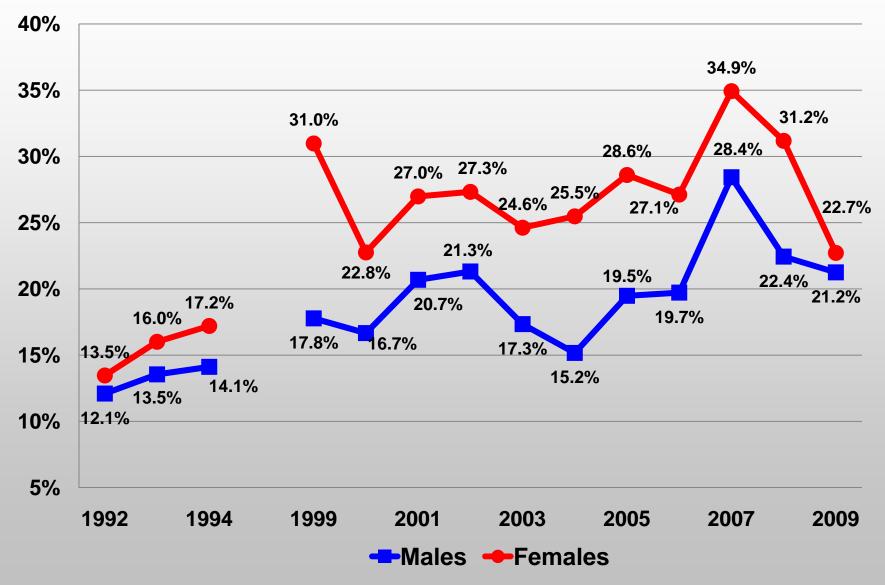


 $(N_m = 13,486; N_f = 2,180)$



APFT Event Failure per Total Events

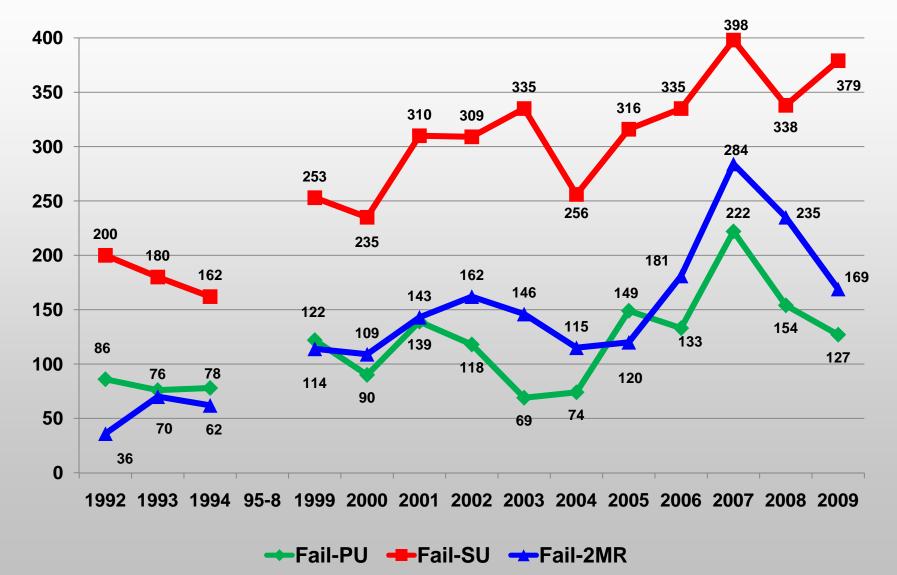






APFT Event Failures - Males

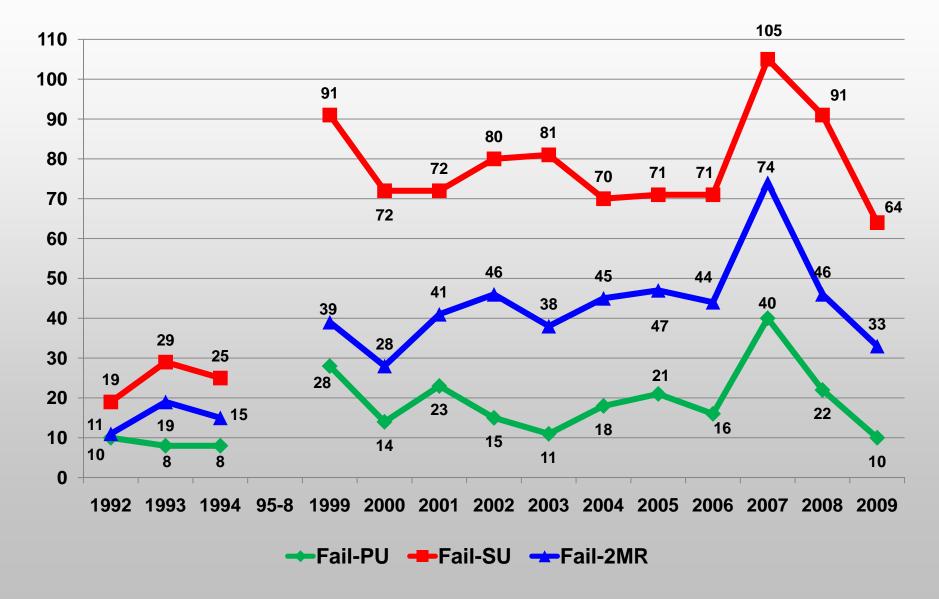






APFT Event Failures - Females

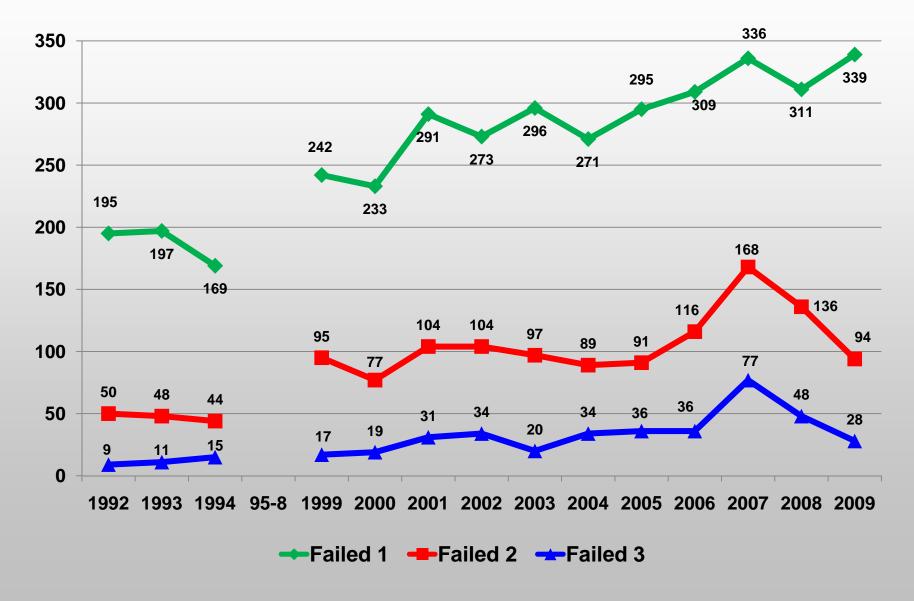






Multiple Event Failures - Males

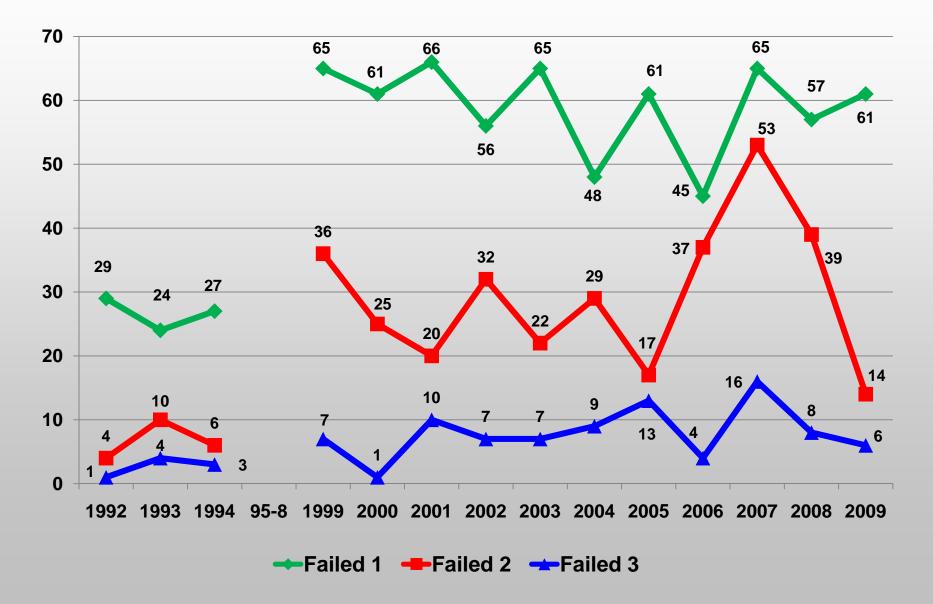






Multiple Event Failures - Females

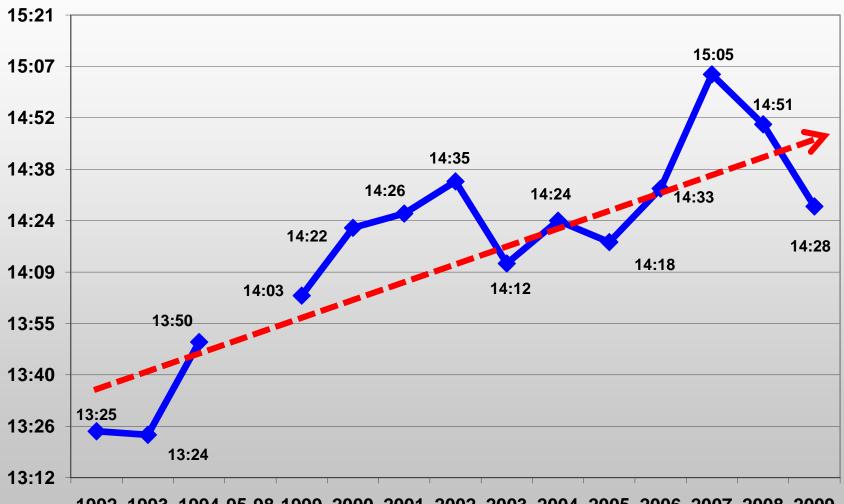






2MR Averages - Males





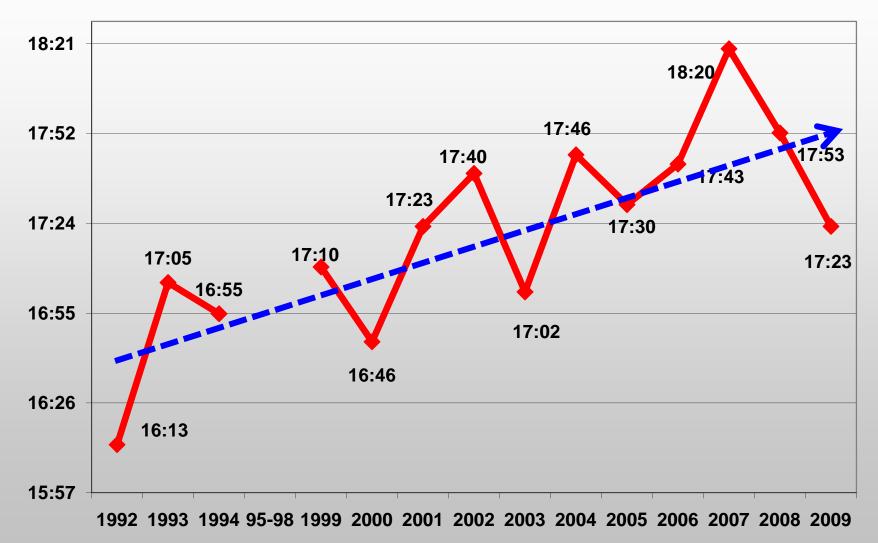
1992 1993 1994 95-98 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009

Approximately a 1:00 decrease in 2MR times



2MR Averages - Females



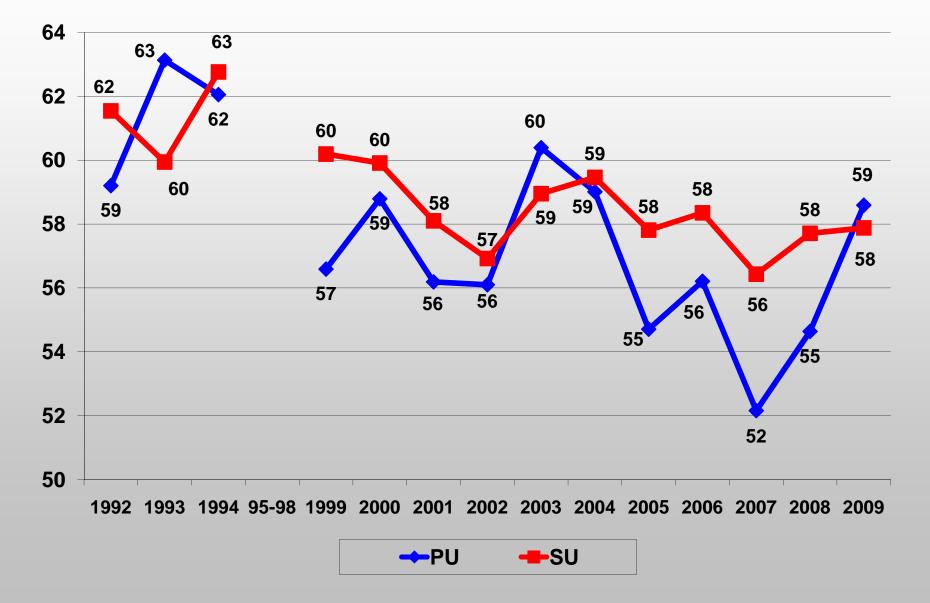


Approximately 1:15 decreased in 2MR times



PU/SU Averages - Males

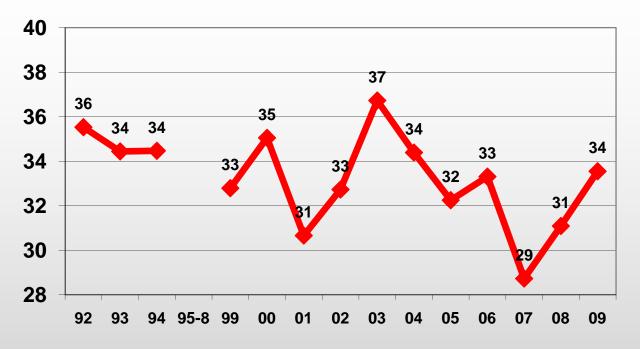


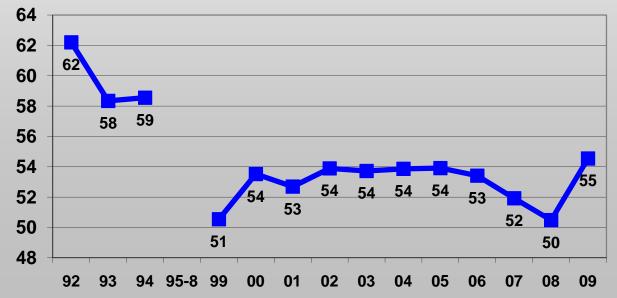




PU-SU Averages - Females



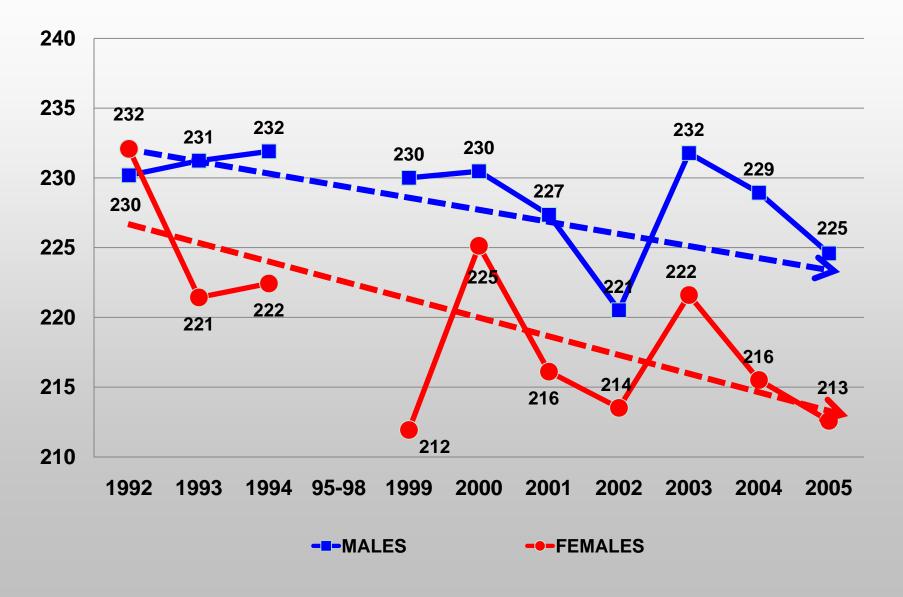






APFT Total Scores







Declining Performance Indicators





Candidate Fitness Assessment

- Must be administered by a HS physical education teacher or Army personnel.
- Measure <u>potential for success</u> in the Physical Program.
- Places a greater emphasis on physical fitness (70%) over motor fitness (30%).
- Minimizes the need for equipment, set-up, and prior experience.
- Sends a message v. the physical nature of USMA/ Army.





Physical Aptitude Exam

Basketball Throw

Standing Long Jump

300 yd. Shuttle Run

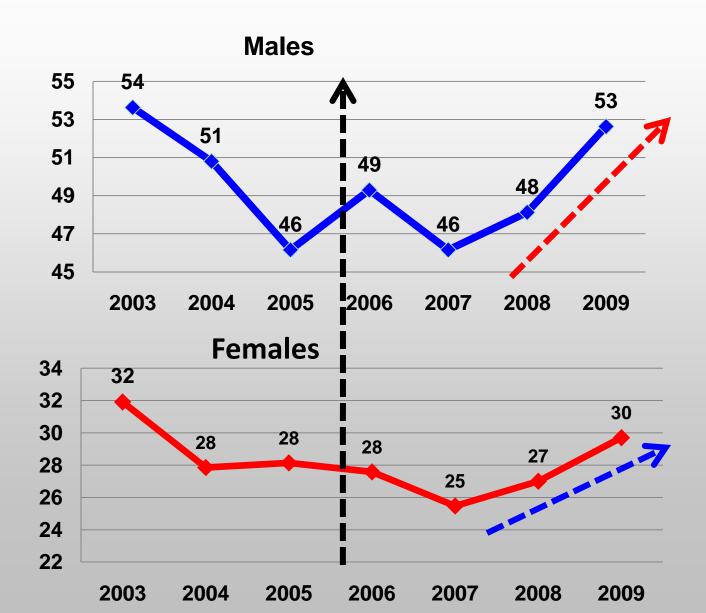
Sit-up

Push-up



Changes in PU Performance B/A CFA for APFT Failures

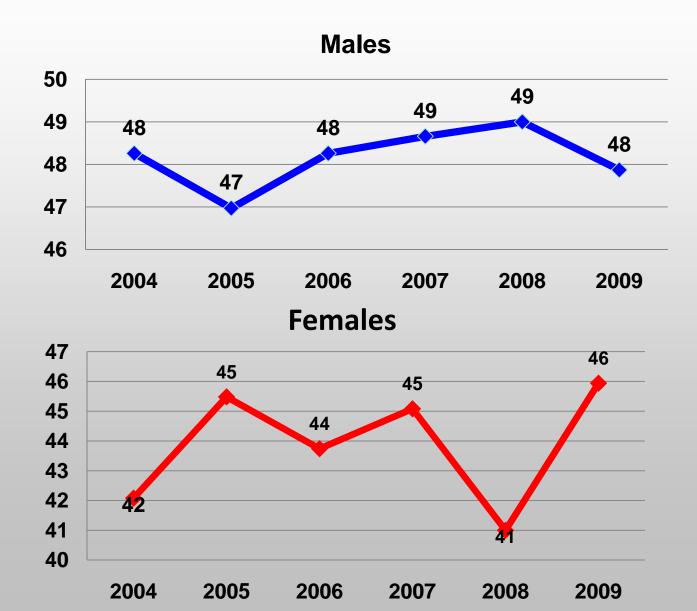






Changes in SU Performance B/A CFA for APFT Failures

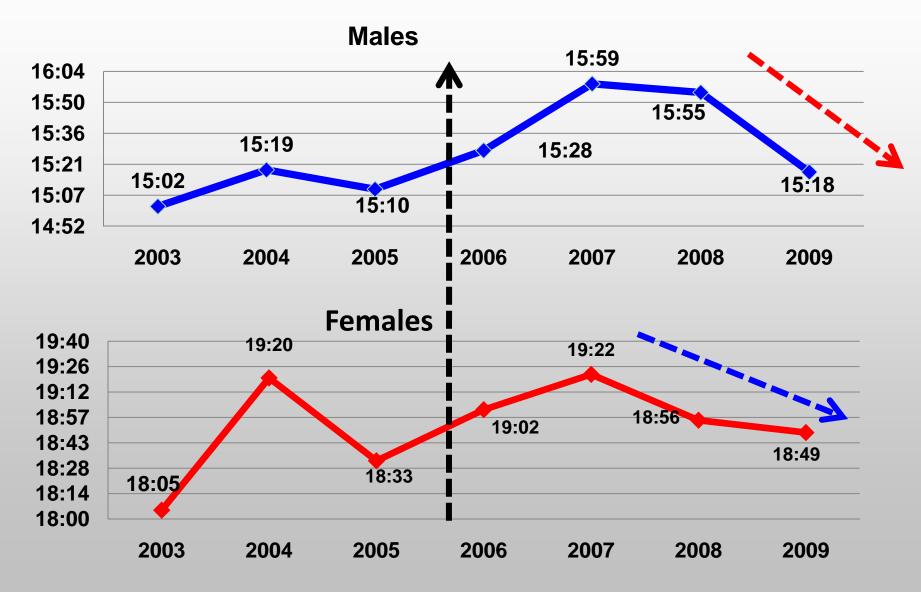






Changes in 2MR Performance B/A CFA for APFT Failures

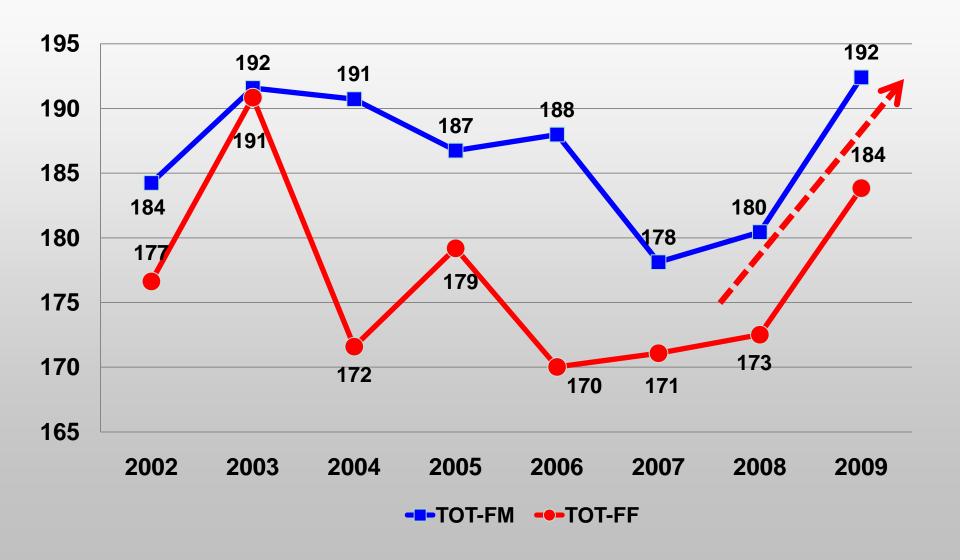


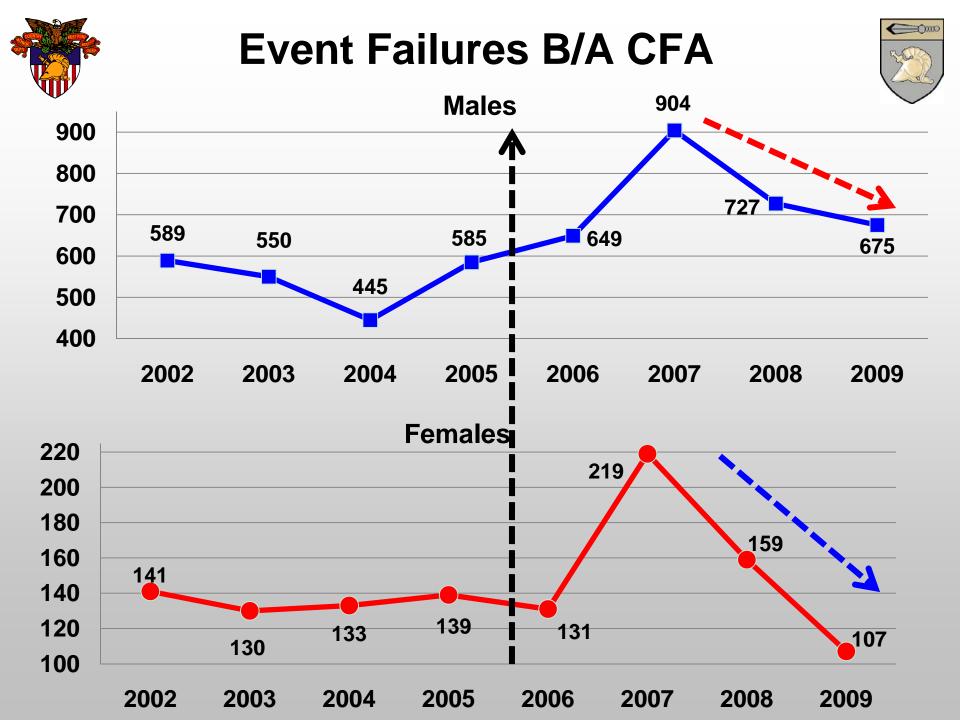




Total APFT Score - Failures



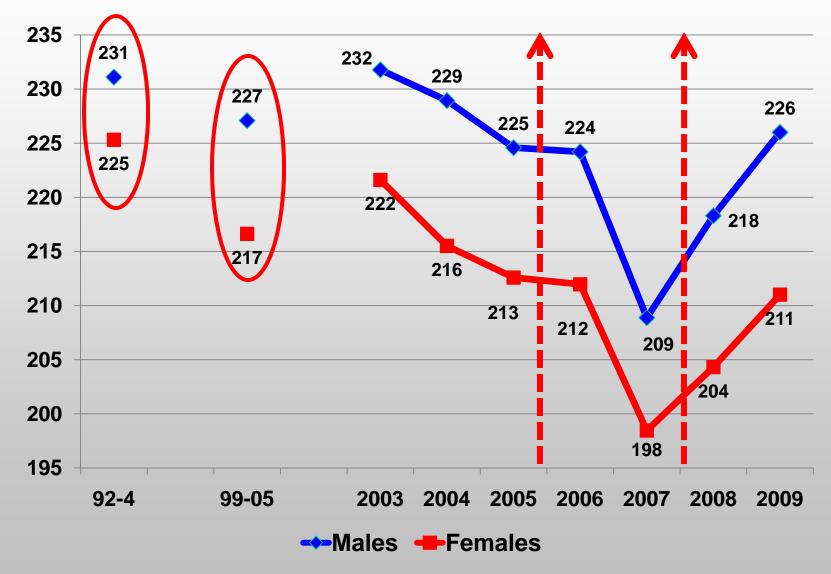






Changes in APFT Averages - All

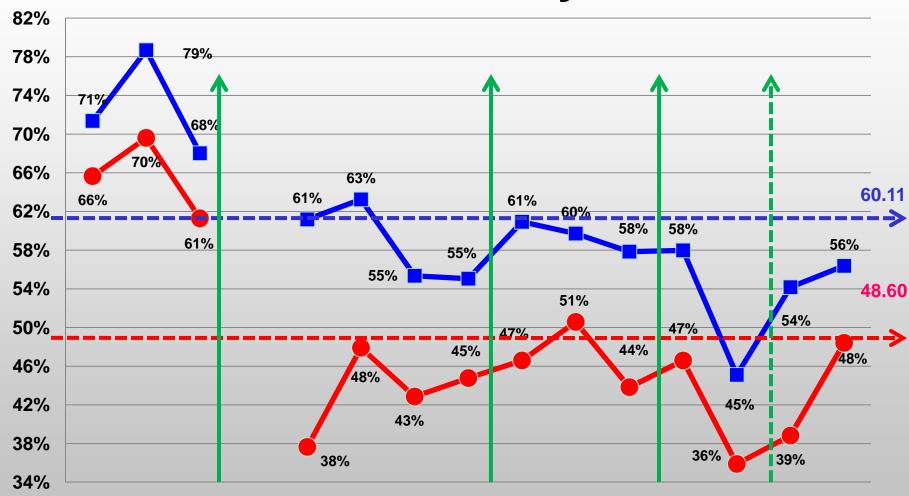








APFT Pass Rates by Gender



1992 1993 1994 95-98 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009





"Nations have passed away and left no trace, and history gives the naked cause of it—
one single, simple reason in all cases; they fell because their people were not fit."

Rudyard Kipling





QUESTIONS?

W. B. East (pw3998@usma.edu)





Historical Events Affecting Physical Performance Needs of the Army

- 1827: Breech-loading firearms
- 1892: Manual of Calisthenics
- 1915: Intro of mechanized armor ("Little Willie")
- 1939: German blitzkrieg tactics during the Invasion of Poland
- 1940: National Selection Service Draft (13-week basic training)
- 1944: Operation Cobra- Patton covered 600 miles in 2 weeks.
- 1950: Task Force Smith 1st major engagement in the Korea War;
 156/406 combatants were KIA or captured during the 12 hour engagement.



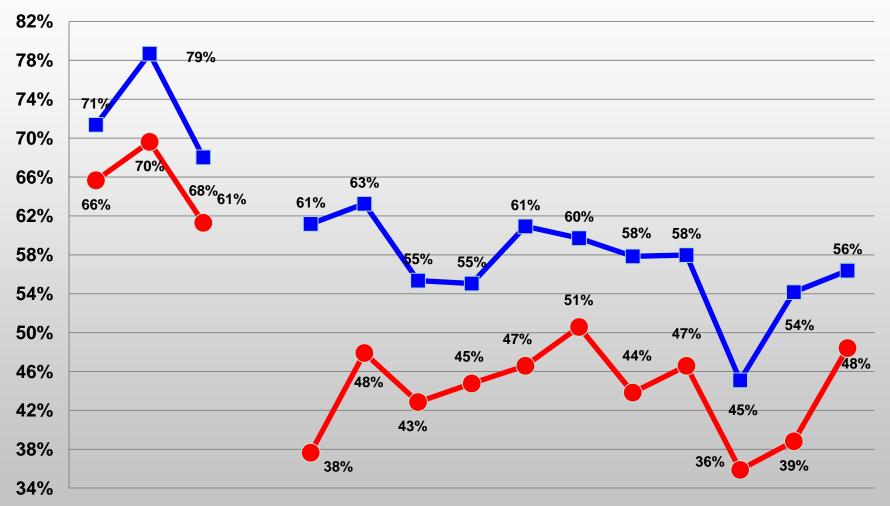




- 1892: Manual of Calisthenics
- 1912: Significant revision in Basic Combat Training
- 1942: Army Ground Forces Test
- 1944: Physical Efficiency Test Battery
- 1946: First publication of FM 21-20 (Eisenhower)
- 1956: President's Council on Physical Fitness and Sport
- 1957: Army Physical Fitness Test (APFT)
- 1961: Physical Combat Proficiency Test
- 1963: Army Minimum Physical Fitness Test Male
- 1974: Advanced Physical Fitness Test for Women





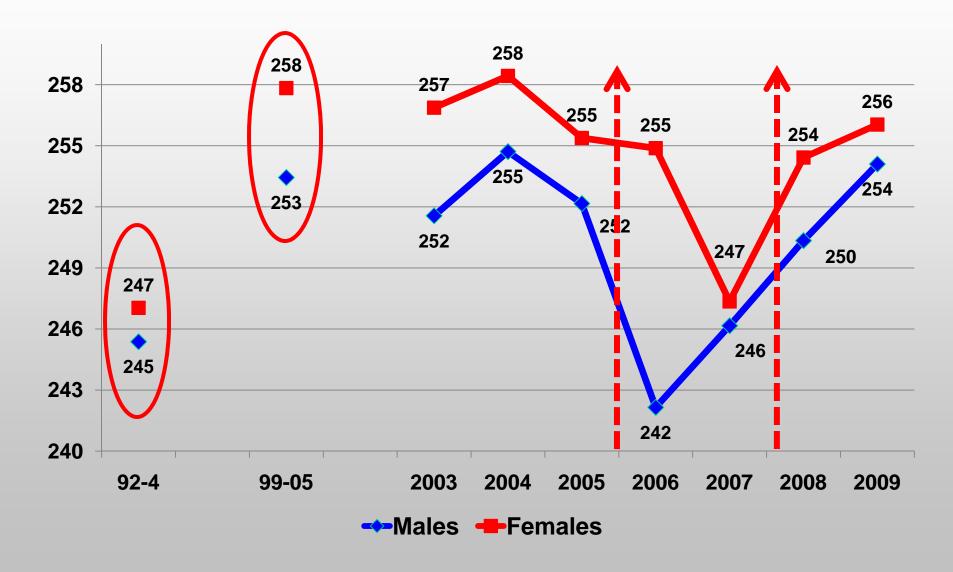


1992 1993 1994 95-98 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009
---Males ---FEMALES



Changes in APFT Averages - Pass

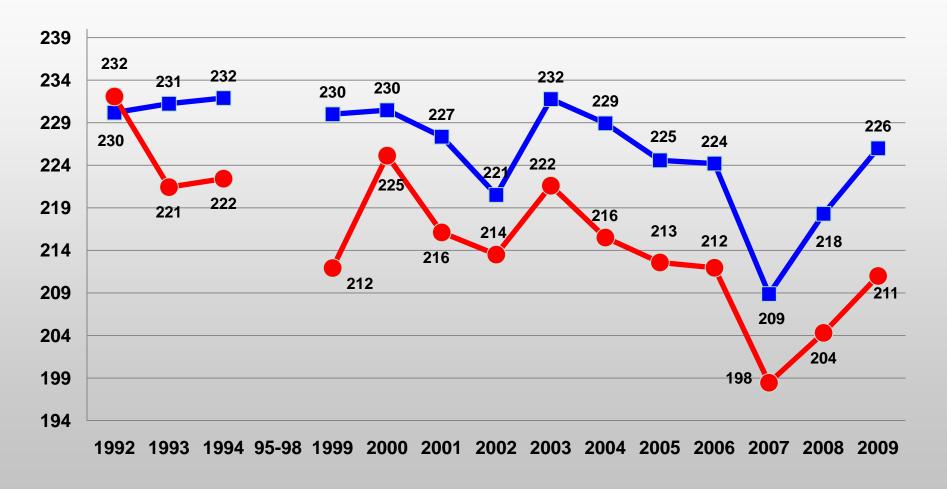






Total APFT - All

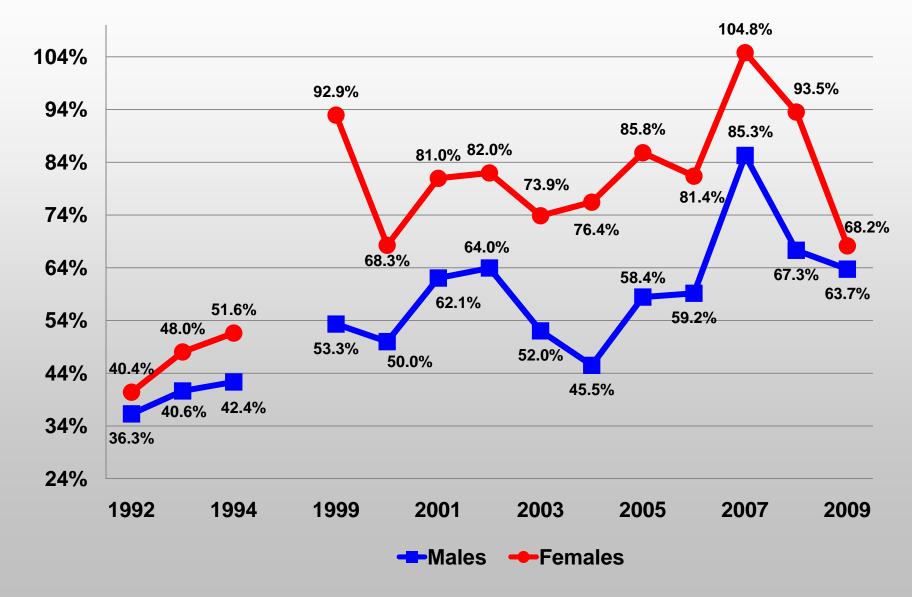






APFT Event Failure per Cadet



























We help military veterans achieve their dreams —

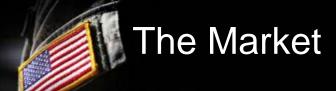
we connect them to employers, educational institutions, franchisors, and other organizations.



RecruitMilitary by the Numbers

- 11 years in business 2 acquisitions
- 65 Television news stories in past year
 CNN and FOX in last 30 days; hundreds of articles and radio spots
- 220 base relationships
- 6,400 hiring employers
- 465,000 registered job seekers
- 90,000 veteran friendly organizations





3.7m
Under age 39



23 million veterans



Why Hire Former Military?

Security Clearances

Diversity

Skills and Training

Character

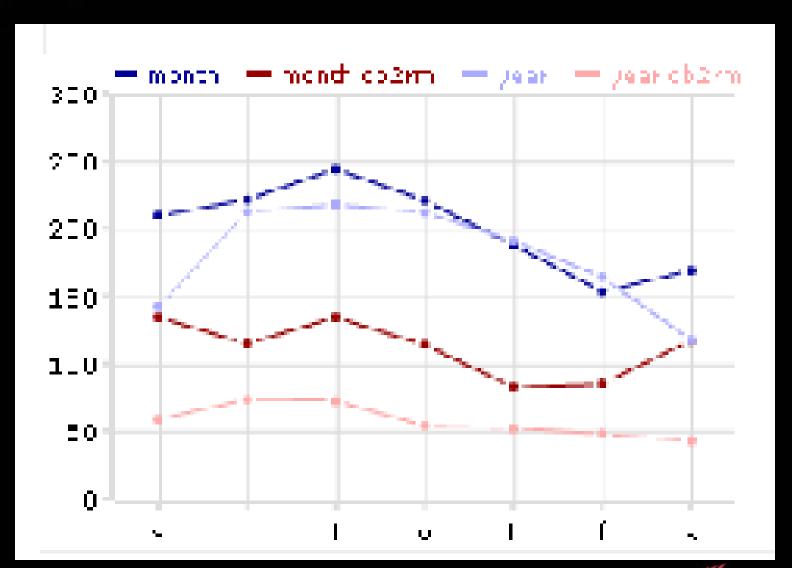


RecruitMilitary Product Innovation





New Candidates per Day of the Week





Demographics

- 85.2% enlisted
- 12.4% officer
- 2.4% spouses
- Air Force 18%
- Army 39%
- Marines 16%
- Navy 23%
- Other 4%





• 85.2% male / 14.8% female

- 22.7% African-American
- 9.4% Hispanic
- 62.5% Caucasian
- 5.4% Other





Lead Generation Demonstration





2008 Recruiter Survey Topline Report

Donna Dorminey, USAAC-G2 Linda Clingan, USAREC-G2





SURVEY OBJECTIVE

"What Do Recruiters Need To Produce More Soldiers?"

Areas of Interest:

Technology

Training

Events

Leads

Waivers

Schools Programs / March2Success

Advertising

Incentives

Resources

Recruiting Environment



METHODOLOGY

- Survey designed by USAAC/USAREC Staffs to address Areas of Interest for Assessment and Actionability
- Specific Questions developed and analyzed through the use of "Ideal State Assumptions"

Key Analysis Assertion: Gaps between Actual and Ideal States will indicate areas of need for recruiters

- Administered 3874 invitations by E-mail May 2008
- 1807 Respondents (47% Response Rate)
- Responses were weighted based on Brigade, Component, and Job



TECHNOLOGY

A1: Recruiters are aware of the automated systems available to them.

Awareness of systems is typically above 95%. Virtual Classroom Server (VCS) is an exception with 70% or lower awareness (and correspondingly low usage).

A2: Recruiters use the automated systems and feel they help them to accomplish the mission.

Recruiters are using the systems available to them. However, for several systems (ie GAMAT, RZ-Lite, ARCA and LMS) nearly half of the recruiters using the systems are doing so because they "have to" rather than because they feel the systems "help to accomplish mission". Notable exceptions are FSR2S and Leader Zone.

A3: Recruiters are confident in the use of the automated systems available to them.

Confidence levels for most systems are lower than expected and this lack of confidence correlates to use of the systems. Recruiters who have confidence in their skills are more likely to use systems and recognize that these systems help them to accomplish the mission.

TECHNOLOGY

A4: Additional features could be added to current systems to further assist recruiters.

Recruiters are vocal in identifying both good qualities for the systems in place as well as proposed improvements.

A5: Recruiters are not required to use paper-based documentation where automated systems are in place.

Less than 40% of Recruiters are NEVER required to use paper-based documentation in lieu of automation. Over 23% are ALWAYS required, and another 31% are SOMETIMES required to use paper in lieu of automation. Top reasons for using paper-based documentation were related to MEPS requirements.

A6: Recruiters feel that the Army MOS videos enhance the Army Interview Process.

While over 80% of Recruiters feel the videos enhance their Army interviews, they were also rather vocal concerning the need to update the videos and very specifically to remove the statement referencing "working long hours in the field".

TRAINING

A1: Recruiters feel they have above average skills in performing the recruiting process.

Over 50% of Recruiters rated themselves as "Very Good" or "Excellent" in the areas of Interviewing, Processing, and Leading Future Soldiers. Areas of significant perceived weakness were COI Development and Schools Programs, with less than 30% rating themselves highly in these areas.

A2: Recruiters feel that unit level training helps to improve recruiting process skills.

In general, Recruiters are pessimistic concerning the value of unit level training. Fewer than 20% of Recruiters rated the quality of unit training as "Very Good" or "Excellent" for improving their ability to perform ANY of the steps of the recruiting process.

A3: Recruiters receive training at their station or unit at least once a week.

73% of Recruiters receive training at their station at least once a week. Another 20% receive training at least once a month. The majority of training is typically conducted by Station Commanders, followed by Training NCOs and Others.

EVENTS

A1: Recruiters are aware of national and local event assets available to them.

As expected, awareness of local assets (74%-96%) is significantly higher than awareness of national events (37%-66%). Analysis to date has not taken into account that national events are not uniformly distributed among Recruiters and this must be taken into consideration when attempting to draw insights from these statistics.

A2: Recruiters feel that all events assets are helpful to them in the accomplishment of the mission.

The overall helpfulness of national events is inconclusive due to the large number of Recruiters who do not have national events occurring in their areas. A small portion of Recruiters (10%-30%) viewed national events as "Extremely or Very Helpful" and even more (20%-28%) viewed them as "Extremely or Very Unhelpful". Recruiters are 3 or more times as likely to view the majority of Local assets as helpful rather then unhelpful in their efforts.

A3: Recruiters receive sufficient notice to adequately plan and execute national and local events.

Recruiters typically consider 14 or more days sufficient notice for executing both national and local events, with 10 days being a critical "break point" for sufficiency. Recruiters are receiving less than 10 days notice for 59% of local events and 34% of national events.

LEADS

A1: Recruiters are most satisfied with the quality of Superleads vs Hot Leads or Leads that have not been refined by the LRC.

Almost 20% of Recruiters are satisfied with Superleads vs 26% satisfied Hot Leads and ADHQ Leads (refined and unrefined).

(Trends: ADHQ Satisfaction 15.9% FY06, 23% FY07; LRC Satisfaction 34% in FY07)

A2: Recruiter initiated leads are the most lucrative vs referrals or prospect initiated.

Recruiter initiated leads are considered most valuable, specifically Recruiter Generated (78.2%) and School Visits (67.7%). Most valuable prospect initiated leads include SASVAB (61.2%) and Walk-ins (56%). Most valuable referrals were from applicants (67.1%), RA and AR FSTP (55%) and COI referrals (52.9%).

(Trend: FY07 – Call-In, Walk-In and SASVAB were rated as top 3 lead sources by Recruiters)



WAIVERS

A1: Recruiters are satisfied with the time it takes to process a Bn or USAREC level waiver.

USAREC level waivers are more problematic for Recruiters than those that require Battalion level approval. 51% of Recruiters are satisfied with Bn level compared with 38% satisfaction for USAREC level waivers. The #1 Recruiter input for ways to improve the waiver process related to speeding up the process.

(Trend: Bn level satisfaction 54% in FY06 and 40% in FY07; USAREC level satisfaction 18% in FY06 and 30% in FY07)

A2: Recruiters are satisfied with the current tracking process for waivers.

36% of Recruiters are satisfied versus 33% who are dissatisfied. The second most frequently mentioned way to improve the process was to improve tracking and the third most frequent input involved standardizing the process.

(Trend: FY06 – 25% Satisfied and 41% Dissatisfied; FY07 – 31% Satisfied and 36% Dissatisfied)



ADVERTISING

A1: Recruiters strongly agree that they can relate to the Army Strong message.

72% of Recruiters "Agree" or "Strongly Agree" that they can relate to the Army Strong message. However, a significant number of recruiters volunteered that they feel much more affinity for the "Be All You Can Be" slogan and some choose to frame their Army story accordingly.

A2: Recruiters are confident in relaying the Army Strong message to applicants, parents and other influencers.

76-78% of Recruiters "Agree" or "Strongly Agree" that they are confident in relaying the Army Strong message to applicants, parents and other influencers.

INCENTIVES

A1: Recruiters see value of all current incentives to an applicant's decision to join.

All current incentives are considered valuable. In general, Recruiters view short-term monetary incentives (MOS, HiGrad and Quick Ship Bonuses) as more valuable to an applicant's decision to join than intangible or more-distant monetary incentives (PaYS program, LRP, Thrift Savings Program). Two exceptions are Skills Training and ACF/MGI Bill, which ranked #2 and #3 respectively following the MOS Bonus.

A2: Recruiters see value in current recruiter incentives for morale and motivation.

The most valuable recruiter incentives is Time Off Award, followed by Recruiter Incentive Pay. These two significantly outpace all other recruiter incentives in value. Certificates and Battalion Level Awards are viewed as least valuable (only 25% of Recruiters value the Certificate as an incentive for morale and motivation).

SCHOOLS PROGRAMS

A1: Recruiters feel welcome in the High Schools and Colleges.

71% of Recruiters feel welcome in their High Schools and 42% feel welcome in their colleges.

A2: High School and College influencers are supportive of recruiters.

Over 50% of Recruiters rate Guidance Counselors, Teachers and Coaches as supportive, while only about 20% rate Parents and School Boards as supportive. In the colleges, over 50% of Recruiters rate the Financial Aid Officers as supportive, far outpacing other college level COIs. Next most supportive are the VA Advisors (41%). Recruiters view Deans and Professors the least likely to be supportive.

A3: Recruiters see value in obtaining High School and College lists and are successful in doing so.

84% of Recruiters see value in obtaining High School lists and it is easy for 61% of Recruiters to get them. However, 24% believe they spend too much of their time on getting the lists and 19% see no value in uploading the lists into ARISS. 31% of Recruiters are able to easily obtain college lists and 13% see no use in obtaining college lists.

A4: High Schools hold and allow recruiters to attend informational functions such as "college night" and job fairs.

69% of Recruiters are aware of functions at their schools and 77% agree that they are (or would be) allowed to attend such functions.

MARCH2SUCCESS

A1: Recruiters feel M2S is successful in their areas.

30% of Recruiters feel the program is useful, while 37% feel it is not useful. However, only 12% of Recruiters always have March2Success tutors available for their applicants. 26% of Recruiters did not know whether they had tutors available and 41% do not have available tutors.

A2. Recruiters feel M2S is useful for applicants to improve their ASVAB scores.

33% feel it is useful, while 34% feel it is not useful

A3: Recruiters feel M2S is useful in their High School outreach/access programs.

25% feel it is useful, while 43% feel it is not useful

A4: Recruiters have had success with M2S improving applicant test scores to the next higher TSC.

Only 49% of Recruiters indicated that their Future Soldiers improved their test scores. HOWEVER, when considering the number of Future Soldiers observed by the responding recruiters, 75% of Future Soldiers improved their test scores to the next higher TSC.

A5: Recruiters who do not use M2S use other resources for improving applicant scores.

About 1/3 of Recruiters wrote in responses for other resources to which they refer applicants. Mos prevalent was ASVAB study guides.

RECRUITING RESOURCES

A1: Recruiters feel their stations have adequate recruiter strength to accomplish their mission.

52% of Recruiters feel they have adequate strength to accomplish their mission.

A2: Recruiters feel that recruiter strength has improved since the spring of 2007.

47% of Recruiters have seen strength levels increase since the spring of 2007.

A3: Recruiters feel they have adequate funding to conduct COI events in their areas.

While 68% of Recruiters recognize the value of establishing COIs in their area, only 30% feel they currently have an adequate number of COIs and only 36% feel they have sufficient funding to conduct COI events.

A4: Recruiters feel they have adequate support to effectively manage their Future Soldiers.

54% of Recruiters feel they have adequate support to effectively manage their Future Soldier Program.



RECRUITING ENVIRONMENT

A1: Recruiters feel they are spending the appropriate amounts of time on their various responsibilities in the recruiting process.

Average percentages of time spent doing various recruiting tasks are approximately equal to percentages of time that Recruiters feel they should be spending. Station Commanders, RA Recruiters and AR Recruiters all feel that they should be spending a little more of their time on COI development and schools programs, and a little less time on RWS data actions and other administrative duties.

A2: Recruiters feel that higher headquarters do not put barriers in place that impede their performance.

Approximately 750 Recruiters wrote in responses that addressed a wide range of perceived barriers. Most prevalent are paperwork/administrative requirements, shifting priorities, and wasted time/requirement for long hours.

A3: Recruiters do not feel there are changes to the recruiting process/procedures that could help improve their performance.

Approximately 775 Recruiters wrote in responses with a wide variety of suggestions. Most prevalent are better hours/flex schedules, letting NCOs be NCOs, and less paperwork/admin (or an office secretary to do it).

A4: Recruiters feel adequately updated on changes that impact the recruiting process.

85% of Recruiters feel they are adequately updated on changes.



Key Findings – What Recruiters Need

- RECRUITERS NEED help in COI development at the Recruiter level (in both resources and training/assistance).
 - Action: USAREC G7/9 has requested copies of the RRS POI pertaining to COI development and will review these documents to determine the way ahead.
- RECRUITERS NEED to be able to fully exploit the benefits of the Army's automated/electronic document capabilities.
 - Action: As automation is migrated to the web in FY10, many documents are under review for electronic signature; however, some may still require "wet" signature. This is currently being reviewed.

Key Findings – What Recruiters Need

- RECRUITERS NEED confidence that leads forwarded through the system are likely to bear contracts.
 - Action: USAREC has established a Leads Management Board that meets on a regular basis to address consolidating and refining lead sources, and is in the process of developing a single, reliable leads prioritization model to score the potential for each lead.
- RECRUITERS NEED to be able to track the status of their waiver requests.
 - Action: An automated tracking system for waivers is now available through GCRc with limited access through Leader Zone and Recruiter Zone to ensure the chain of command is involved in the process. This is currently being evaluated.

Key Findings – What Recruiters Need

- RECRUITERS NEED to feel comfortable working in their High Schools and Colleges.
 - Action: Training the recruiters to understand the college market. Recommendation:
 - 1) Enforce the UR 601-104's training requirement for Rctrs, St Cdrs, Co Cdrs, Bn Cdrs to complete "College 101" within LMS.
 - 2) Develop a training brief for ESS / Co Cdrs to use at St / Co trng level.
 - Action: Leverage existing ROTC presence on the college campus.
 Recommendation: Enforce UR 601-104's requirement for the Bn Cdr's to host a semi-annual coordination and planning conference, inviting all PMS representatives from appropriate ROTC battalions.
 - Action: Improving High Schools / College relations.
 Recommendations:
 - 1) Increase the usage of school / campus based COI events to staff/departments. An example would be conducting a information brief on: the Post 9/11 GI Bill and LRP to the financial aid staff, ConAP to the Admissions staff, etc. With the HS's it could info briefs on M2S, ASVAB CEP, PFL's, new HS Program Guide, etc.
 - 2) Attending school based events (sports, concerts, etc.).
 - Action: Enhancing the comfort level of the recruiter on the college campus.
 Recommendation: Encourage recruiters to enroll / attend a college class at their local college. Tuition assistance provides funding for these courses, in addition the college would help the Recruiter both professionally and personally. As a student, the Recruiter has the right to be on the college campus.

ARMY STRONG.

Key Findings – What Recruiters Need

- RECRUITERS NEED emphasis on "Time Off" awards for their performance.
 - Action: More liberal use of "Time Off" awards; commanders may grant Soldiers a regular 3-day pass for performance of duty and conduct IAW paragraph 5-27, AR 600-8-10 or may grant special 3 or 4 day pass to Soldiers as special recognition for exceptional performance of duty IAW paragraph 5-29, AR 600-8-10.
- RECRUITERS NEED more effective training programs for both technical and procedural tasks.
 - Action: In FY08, completed fielding of Battalion Application Trainers to all USAREC battalions to assist with training on software applications. In Dec 08, published the OPORD forming battalion training teams that will assist commanders in planning, executing, and assessing training.
- RECRUITERS NEED relevant and engaging MOS videos to enhance the Army interview.
 - Action: New MOS videos are realistic portrayals of current training and duties. The videos are action-oriented and approved by schools and proponents SMEs. Each MOS video begins and ends with segments showing job performance. Currently we are producing 55 new MOS videos and editing narration of 27 MOS videos. These videos will be fielded on the Army Recruiting Multimedia DVD Version 2.5 in Spring 2010. The production of 38 new MOS videos in 2010 is underway for release in 2011.

Key Findings – What Recruiters Need

- RECRUITERS NEED adequate notice to plan and execute events.
 - Action: The development of the Events Management System (EMS) will provide visibility and scalability for national and local events down to the recruiter level and provide two-way conversation capability for planning and feedback
 - Event tracking is being worked at the AAC level at this point with a new system to be released and implemented this FY.
- RECRUITERS NEED to understand how to exploit the benefits of the March2Success Program.
 - Action: Incorporate March2Success in the Co Trng schedule, to include development of a M2S training brief.
 - Recommendation: Bn ESS conduct training on M2S at Co Trng, in order to develop an understanding of the program and how to highlight the benefits of the program.
 - Action: Highlight March2Success "best practices."
 Recommendation: Bde/Bn ESSs will forward M2S best practices to HQ USAREC Ed Div for posting on the USAREC G7/9 portal, as well as continuing to publish best practice articles in the RJ.

Key Findings – What Recruiters Need

- RECRUITERS NEED a flexible work schedule that enables them to most efficiently use their time to balance Army and personal responsibilities.
 - Action: Recruiters have a flexible work schedule, although it is a very full schedule. This is the commander's call (Station on up) and also goes back to mission requirements.
- RECRUITERS NEED to be recognized as NCOs and feel they are valued members of the USAREC team.
 - Action: USAREC began a Culture of Value initiatives program in FY09 with a Change Initiative throughout the Command. A Command Climate survey will be fielded in October 09, which will evaluate this initiative.

QUESTIONS / DISCUSSION



Navy Recruiter Quality of Life Study

Prepared for the Army Accessions Research Consortium



Jennifer Jebo, PhD
Navy Recruiting Command
Strategic Plans, Research and Analysis Department (N5)
September 2, 2009



Navy Recruiter Quality of Life Study

- Recruiter quality of life (RQOL) has been an important focus for the Navy Recruiting Command (NRC) during the past 20 years.
- Assumption is that recruiters' professional QOL impacts both their job performance and retention in the military.
- Ten years ago, NRC developed a survey to track RQOL that has been administered in two-three year intervals.
- Survey was administered in 1999, 2002, 2004, 2006 and most recently in February 2009.



Measuring Professional Quality of Life

- The Navy RQOL Survey questions address 11 areas associated with recruiting personnel's professional quality of life including:
 - Job satisfaction
 - Work environment
 - Recruiting Equipment
 - Professional Selling Skills (PSS) training
 - Enlisted Navy Recruiter Orientation (ENRO) training
 - NRD/Other training
 - Goals and Objectives
 - Rewards and Recognition
 - NRD Leadership and Support
 - Supervisory Leadership and Support
 - Availability of Navy Recruiting Materials

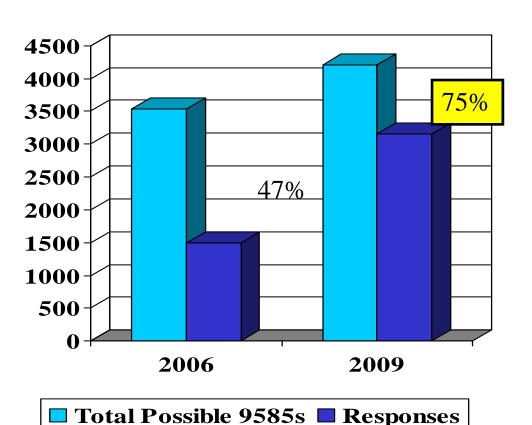


Navy RQOL Survey Analysis

- With only a few minor changes, the core questions on the survey have remained constant enabling a longitudinal comparison of changes in quality of life.
- The core survey questions were designed using the same response scale so that aggregate scores could be obtained for each of the 11 RQOL areas and ultimately combined into a single quality of life score.
- With each administration, the validity of the questions measuring each of the 11 RQOL areas has been reconfirmed using factor and reliability analyses.
- Results of the 2009 survey were compared to those from 2006. Three year recruiting tours ensured that at least some of the same personnel participated in both surveys.



Survey Response Rates



With 3,163 responses, the 2009 RQOL Survey had an estimated response rate of 75%.

This is a significant improvement from the 1,502 responses and estimated 47% response rate in 2006.

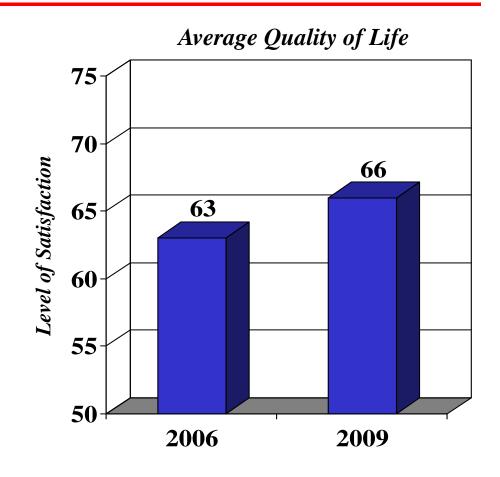
2006 response rate calculated using the average number of active and reserve enlisted recruiters for FY06. 2009 response rate based on number of active and reserve enlisted recruiters in December 2008. Responses include small number of Zone Supervisors. For purposes of this analysis, only Recruiters and RinCs are included in 2006 and 2009 comparisons.



Overall Recruiter Quality of Life

Overall quality of life is calculated by combining responses to the 63 core survey questions.

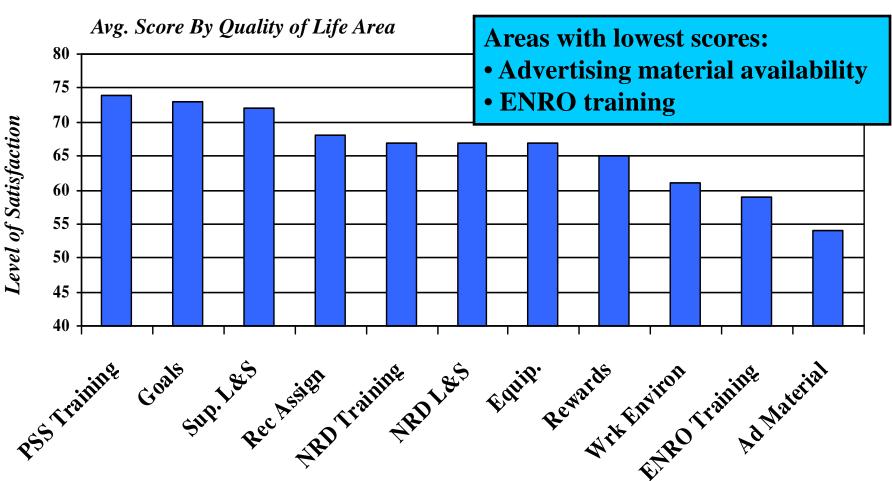
The aggregate QOL measure is then scored along a 100 point scale where higher scores equate to increasing satisfaction with quality of life.



Compared to 2006, Navy recruiter QOL is better in 2009.



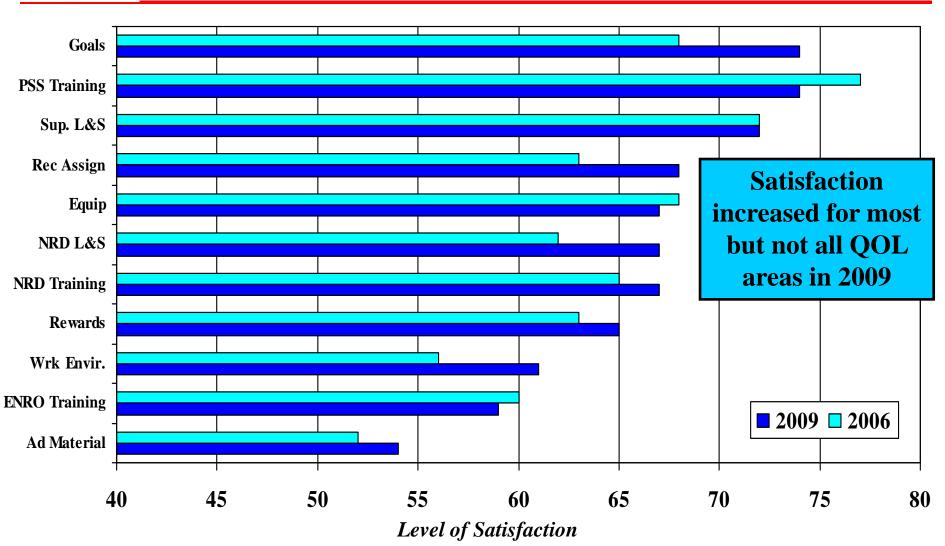
Quality of Life Area Measures in 2009



An aggregate measure of recruiter satisfaction with each QOL area was generated by combining survey questions relating to that area.

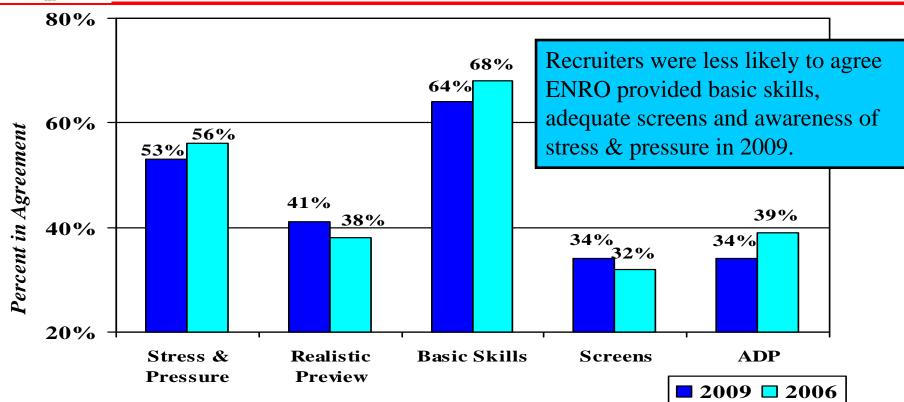


Changes in Average Scores by QOL Area





Enlisted Navy Recruiter Orientation Training



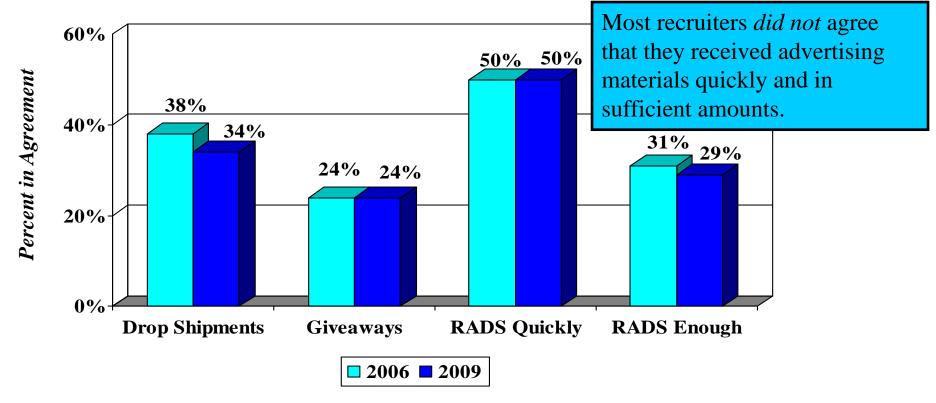
Recruiters were asked if they agreed ENRO provided the following:

- Sufficient training on use of ADP equipment.
- Adequate screens to eliminate those who wouldn't make it in recruiting.
- Basic skills needed for recruiting.

- Realistic preview of recruiting duty.
- Awareness of stress & pressure of recruiting



Trends in Survey Questions about Advertising Material Availability



Recruiters were asked if they agreed with the following statements about Navy Advertising Materials:

- My station receives drop shipments of giveaways quickly.
- My station receives enough giveaways.
- When I order RADS, station receives them quickly.
- I am able to order enough RADS for recruiters at my station.



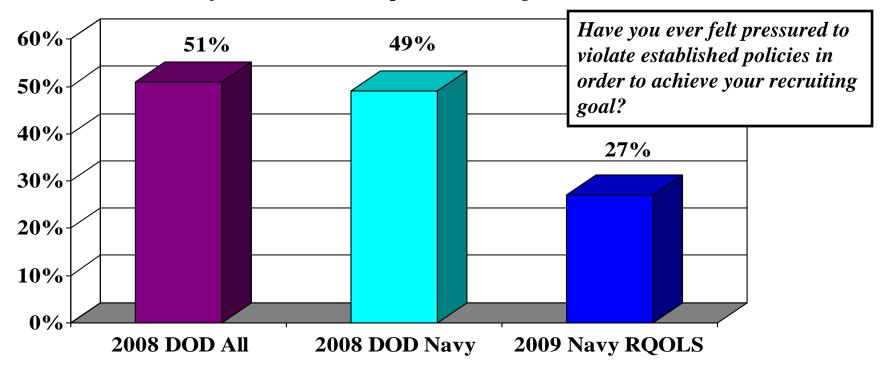
Comparison of 2009 Navy and 2008 DOD Recruiter Quality of Life Surveys

- Several questions from 2008 DOD Recruiter Quality of Life Survey were included in the 2009 Navy RQOL Survey on the following topics:
 - Pressure to Violate Policy
 - Achievability of Personal Recruiting Goals
 - Work and Personal Life Balance
- Comparison of these questions revealed Navy recruiters' opinions in 2009 differed from those of all DOD recruiters and from the Navy recruiters surveyed in 2008.



Pressure to Violate Policy

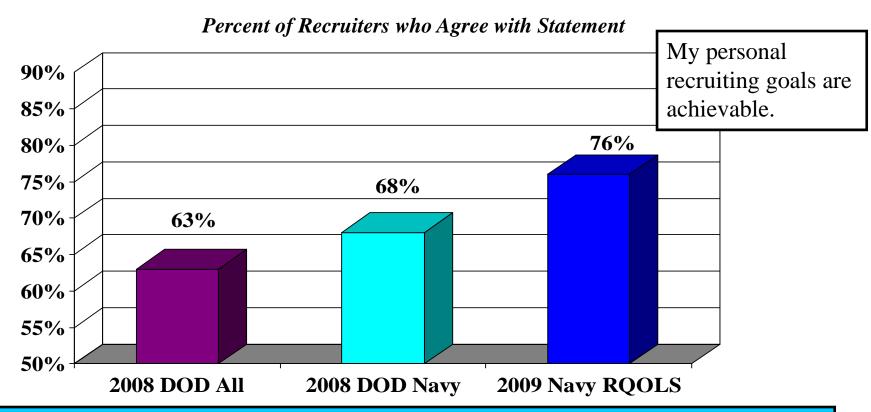
Percent of Recruiters Who Report Ever Being Pressured



Fewer Navy recruiters reported feeling pressured to violate policy in 2009.



Achievable Recruiting Goals



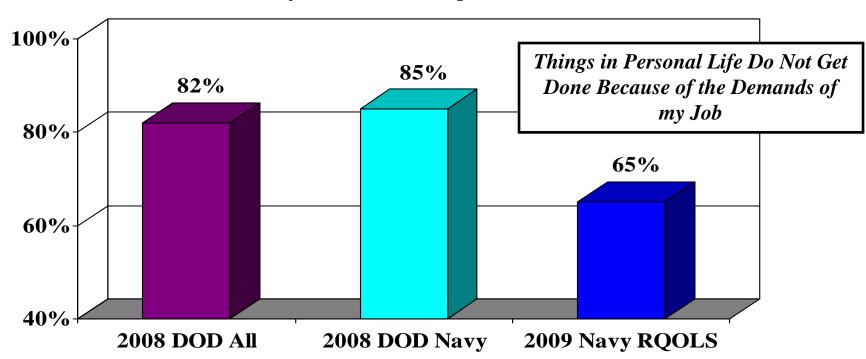
More Navy recruiters agreed their personal recruiting goals were achievable in 2009.

^{* 2008} DOD RQOL Question: My monthly goals/missions are achievable.



Work and Personal Life Balance

Percent of Recruiters who Agree with Statement



Navy recruiters were less likely to indicate job demands interfere with personal life in 2009.



Conclusions & Recommendations

- In general, Navy recruiters' have a good professional quality of life:
 - They are more satisfied with their professional QOL in 2009 then in 2006.
 - Compared to results from 2008 DOD RQOL Survey, they are less likely to feel pressured to violate policy and more likely to view their goals as attainable.
- Additional analysis needed:
 - To determine why recruiter's satisfaction with ENRO training declined between 2006 and 2009 and is lower than almost all other QOL areas
 - To determine why recruiter satisfaction with Navy advertising materials has remained lowest of all QOL area measures.



Questions and Comments



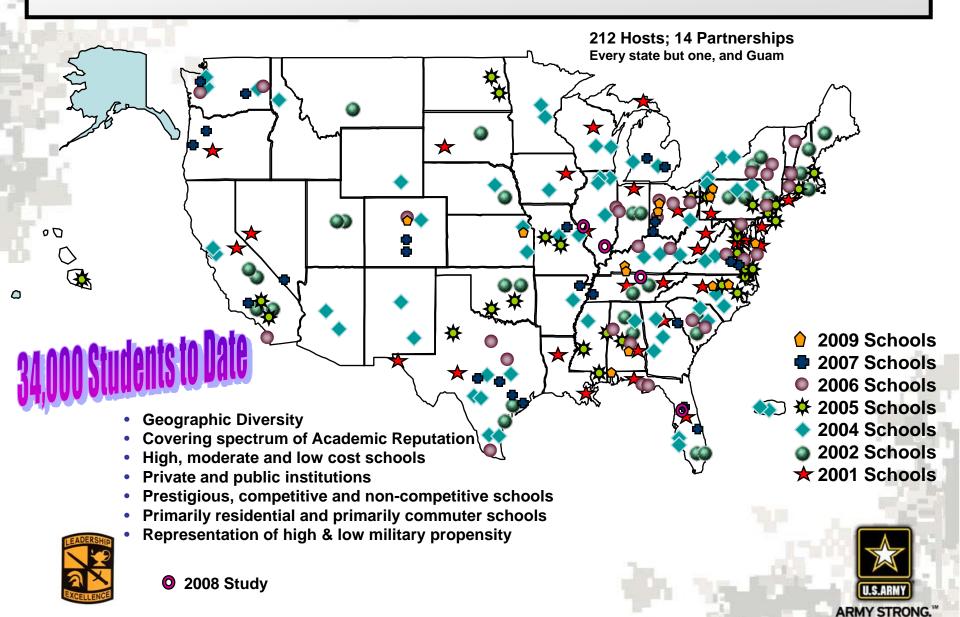
The 2009 On-Campus Market Potential Study

Dr. Bert Huggins

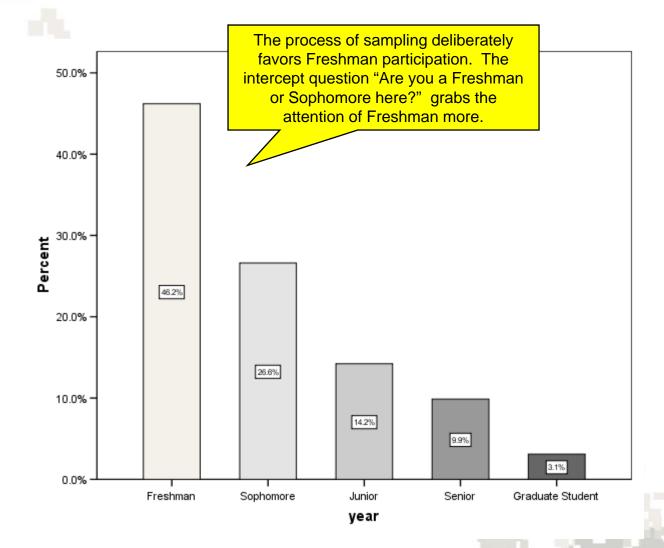




Total 226 Schools Studied



Year in School Population Sampled





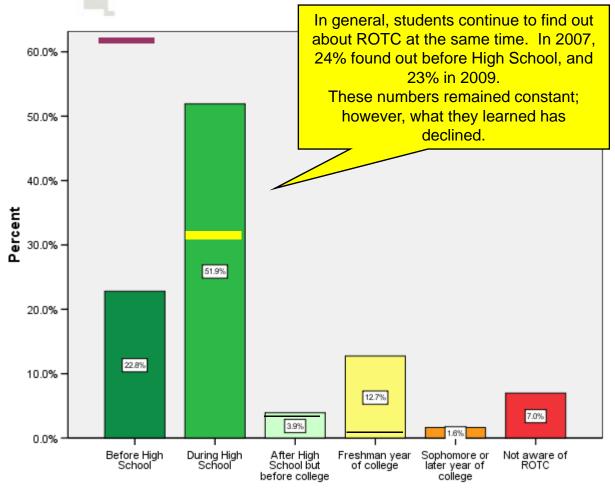


When Students Learned About ROTC

Timing of Learning is key variable between Cadets participating and general student population.

Earlier information leads to higher participation rates.

Getting information to prospects and parents before High School should increase interest and competition for scholarships and contracting for ROTC commissions.



When did you first become aware of Army ROTC?



Indicates when Cadets learned about ROTC



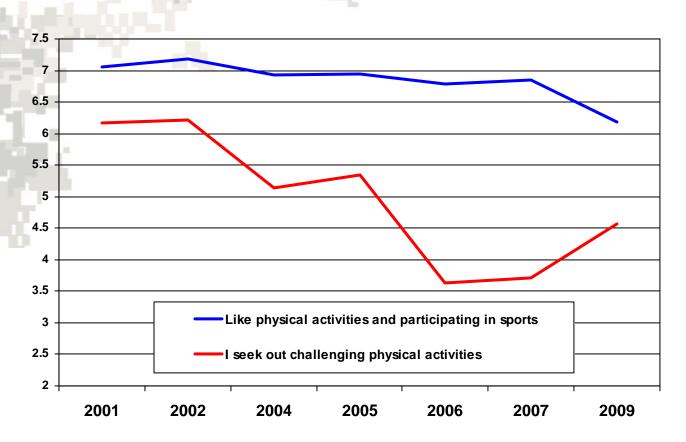
Trends Analysis

- Some of the downward trends from the 2006 and 2007 study years have checked, and appear to show signs of reversal.
- Students are more concerned about financing their education than in the past and they are starting to show real concern about finding a job and finding one that allows them to use their education.
- Students are less interested in physical activities than in the past.
 - Obesity has hit campuses. College students are more fit than their peers, so it must be really bad among those not going to college
 - Unfit students rarely succeed as Cadets and Cadets who do not like physical activity are less apt to commission
- Students in 2009 are less knowledgeable about ROTC than prior to 2005, and are not as interested in finding out about it. However, the interest in 2009 was higher than in 2006/7.
- There are three plausible reasons for the turnaround:
 - The new administration
 - The withdrawal of forces from Iraq
 - The knowledge that the US is in a deep recession
- Two other reasons could peak interest:
 - Parents losing funds that were meant to pay for college
 - That there is some cyclic pattern yet undetermined in interest





Physically Fit?

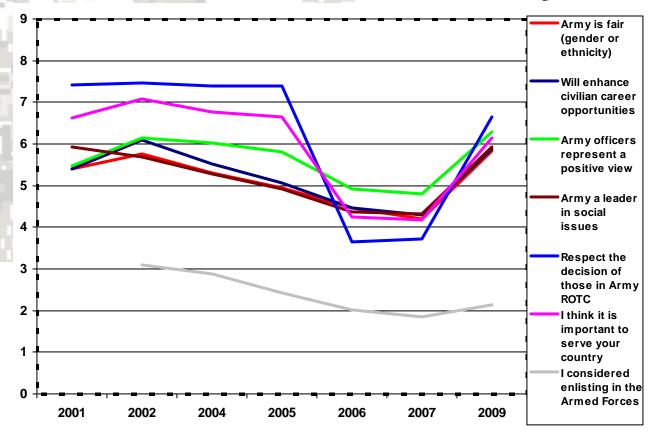


- Students are less likely to indicate that they like sports and physical activity than seven years ago, but some increase in interest in challenging physical activity took place in 2009.
- Overall, the decline in interest in regular fitness in the majority of students is distressing, and validates the health assessments of today's youth.
- The sour part of this story is that there does not seem to be a national trend back to fitness.





Trends Analysis



- Most of the attitudinal elements started sharply downward in 2006 and remained there in 2007.
- 2008 was only a validation study and could not be used in the trends analysis but did not show any signs of reversing the 2006/7 downturns.
- Something has happened that points to external factors changing fundamentally the way students perceive ROTC and the Army.

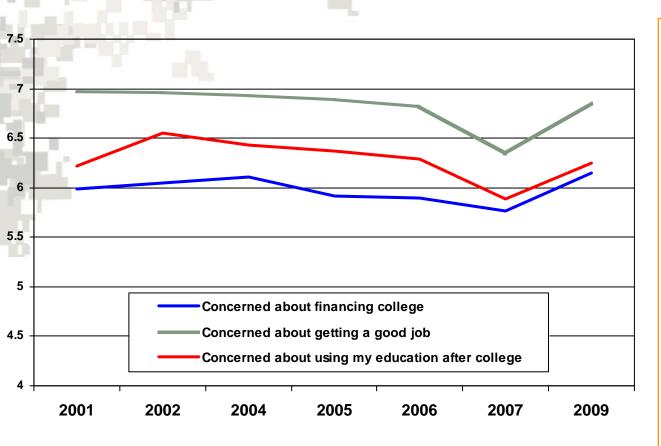
- Three things have changed:
- 1) New Administration
- 2) Increased public discussion on the reduction of forces in Iraq
- 3) Public awareness that the United States is in a deep recession



How these external effects are interacting or whether some other element is affecting student attitudes is not clear. But the above graph shows that attitudes are volatile and could easily go back to the 2006/7 levels.



Economic Reality Sets In

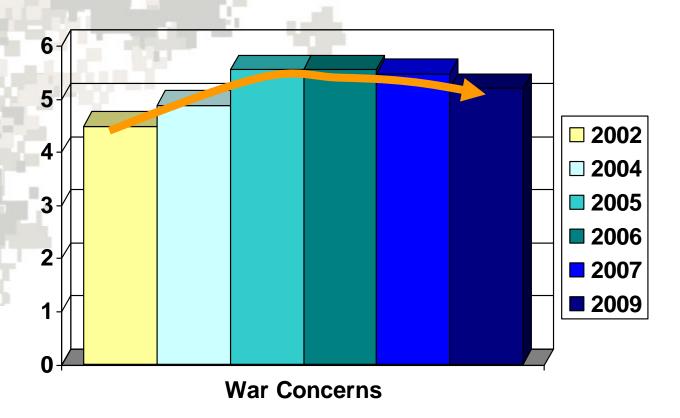


- College financing has been less of an issue with students from 2004 to 2007, despite an increase in costs of nearly 20 percent over that period.
- In 2009, the concern went up markedly, as did concerns about students getting a job and using their education after college.
- While a job after college has not gone up as high as it was in 2002, and certainly panic has not set in, it is an indicator that students see a less rosy picture of post college opportunities.



- The small sample in 2008 tracked with 2007 on these concerns.
- All of the change from 2007 to 2009 likely occurred in the past year.





I would not consider Army ROTC because of war or being placed in a position where I would be in a location of physical danger.

 On a scale of 0-9, the threat of physical danger steadily increased from 2002, when the question was introduced, to 2005.

- It leveled off in 2006 and 2007, and has dropped slightly in 2009.
- The concern of war and physical danger does not deeply affect First Stringers, but does affect the general student population.



Hecklers are almost always at the top of this scale.



Domains

Domains are the aggregate responses from several items on the survey that explain an area of behavior or belief.

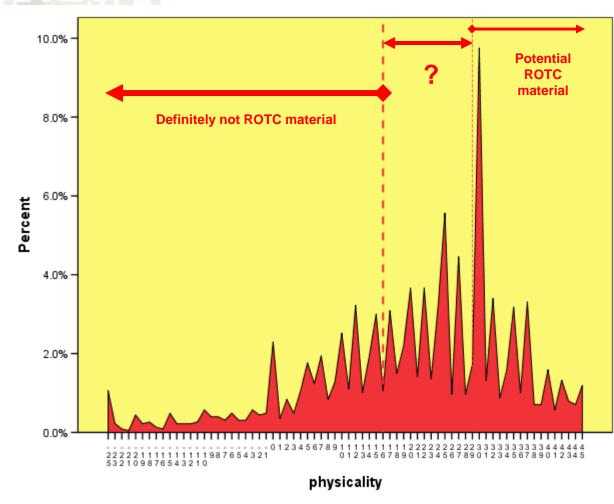
There are several domains in the survey, and all of these can be compared to the school type, geographic area of the country or ethnicity or gender of the respondent.

Questions can be ascribed to more than one domain, and not all questions are equal in power.





Domains - Physicality

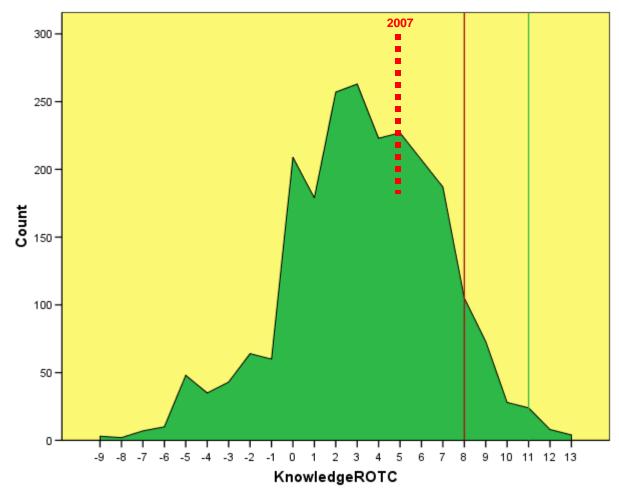


- Interest in physically demanding activities are down from the 2001-2004 period and about the same as 2006-2007.
- The domain includes challenging physical activities, regular physical activities, interest in survival training, parachuting from an airplane, adventure training and outdoor activities.
- Overall, this domain would likely screen out at least 40% of students from consideration of ROTC due to its physical nature.
- First Stringers generally fall into the top 20% or scores of 30 and above.





Domains - Knowledge About ROTC



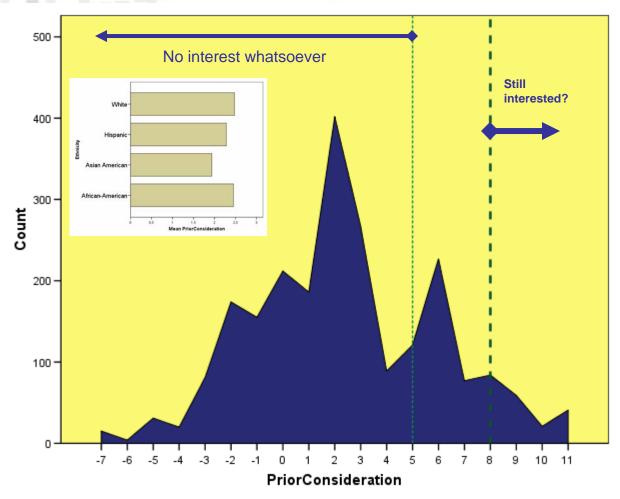
- The scale is a total of those things that the person knows (right answers) minus the things that the person does not know (wrong answers).
- To get a -9, you would have to answer everything wrong, which, even by guessing, is difficult.
- To get a 13, you would have to know a great deal of the basics (scholarships, stipends, training in the summer, and leadership).
- The knowledge levels can be compared from year to year.
 This year was the lowest.
- Knowledge remained stable from 2001-2004, declined slightly from 2005-2007.



Information on ROTC elements, benefits, etc. are lower even than 2007. The scale theoretical limit is 18. No one scored over 13.



Prior Consideration (Ever Thought about ROTC)



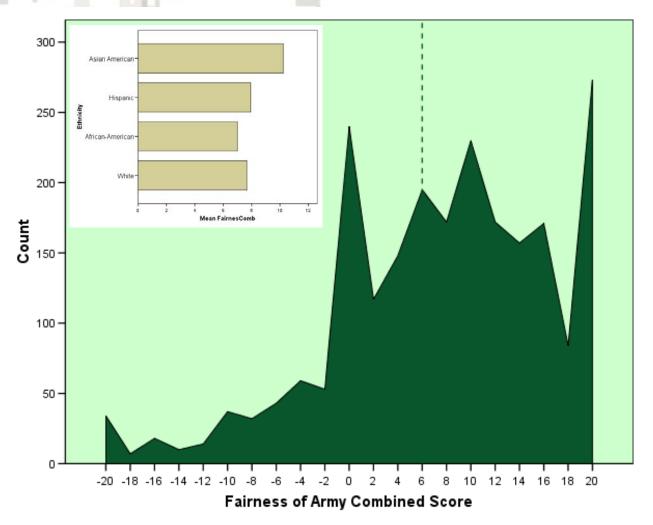
- The 2262 students taking the survey in 2009 were similar in their responses about having considered or explored Army or ROTC in the past or would contemplate it now.
- The pattern shows that 230 students either seriously considered ROTC or might seriously consider it now.
- Prior consideration is not well linked to knowledge, and information acquired in prior consideration appears to be faulty.
- Insert shows that prior consideration is highest with Whites and African-Americans and lowest with Asian Americans.



-1 and below indicate adamant refusal to even consider the possibility of ROTC, while those over 8 have considered or have lingering interest.



Domains - Perceived Fairness of the Army

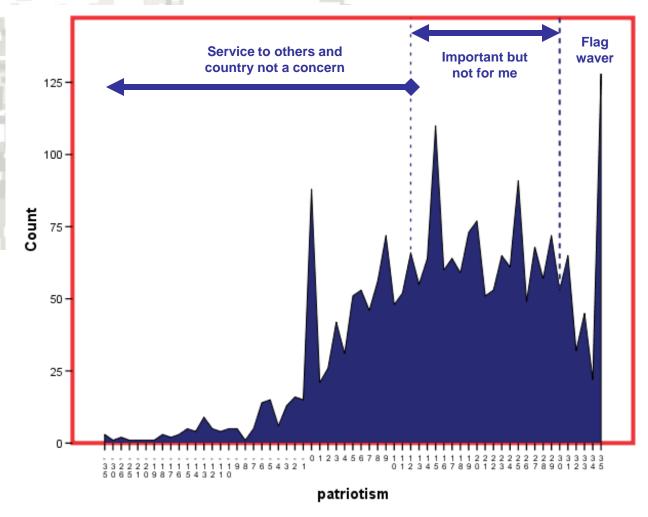


- Perceptions of fairness of the Army are higher than in 2007 or 2006.
- The insert at left shows that Asian Americans particularly see the Army as a fair institution and one that is a leader in social change.
- African-American views are also up, but still lag behind the major ethnic categories.
- Females are less likely to see the Army as fair.





Domains - Patriotism

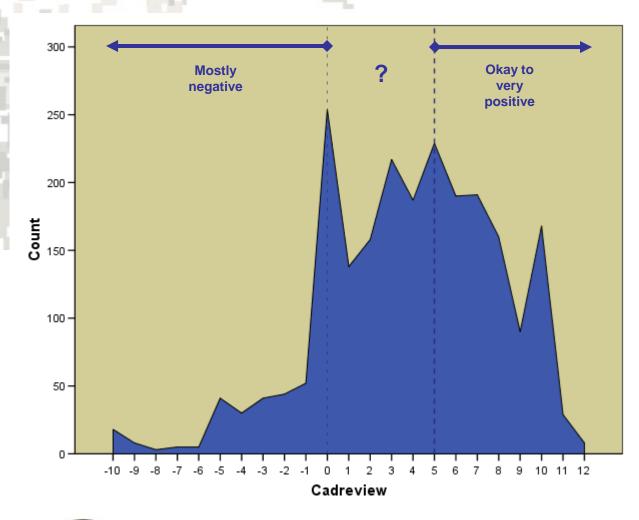


- The patriotism domain is dominated by importance of service to country.
- All ethnicities have roughly the same responses with the exception of African-Americans which remains statistically lower.
- The African-American index is up from 2007, but all others remain unchanged.
- Patriotism shares with altruism in the scales.
- Of all domains, this is the least adequately explained in the survey.





Domains - View of Cadre



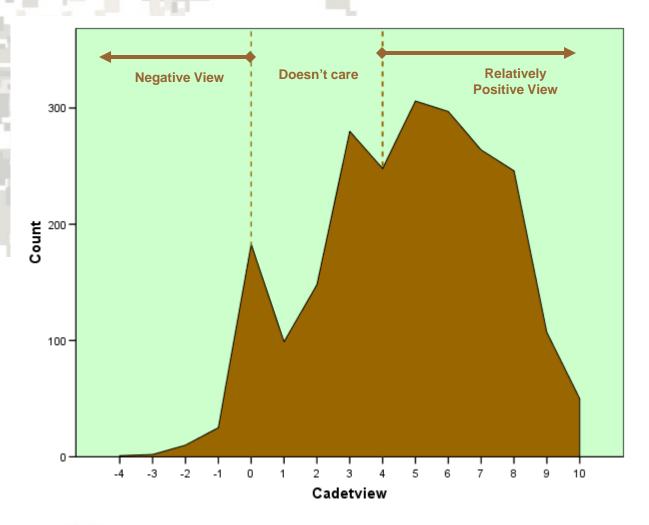
- A positive view of the cadre seems essential to recruiting; however, the overwhelming majority of students have never talked to cadre.
- Cadre become the surrogate for what an Army officer or NCO really is for the majority of students on campuses.
- The better they feel about them, the more likely they will consider being one of them.
- Cadre has remained mostly unchanged.
- There are no differences in perceptions based on ethnicity.



Some schools are outliers in Cadre View. University of Alabama is at the top and Hofstra is at the bottom.



View of Cadets Remains Strongly Positive

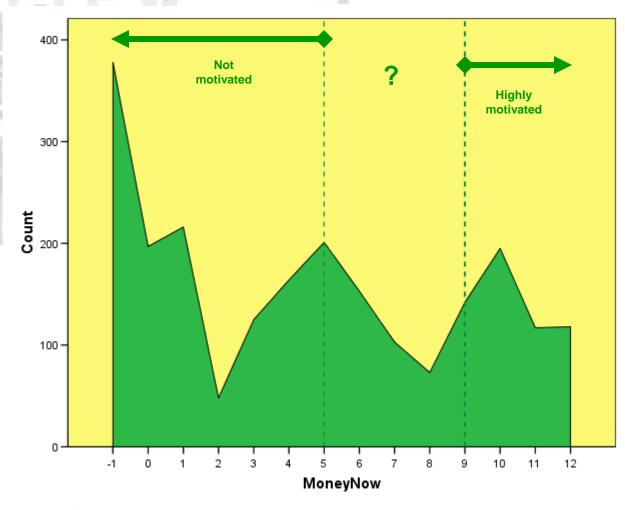


- How students view Cadets has a lot to do with future recruiting on campus.
- If the students see Cadets positively, they may choose to be one themselves.
- Since the beginning of the survey in 2001, the opinions of nonparticipating students on campus of Cadets has been positive.
- This positive view extends through the 2009 survey.





Domains - Money Now



- Money now is the degree that scholarships, stipends and other immediate benefits motivate the student to consider Army ROTC.
- This domain tends to measure the elements of immediate financial needs, not future financial considerations.
- This domain includes most of the incentives that ROTC tracks and has increased or modified, such as loan repayment.
- The cheaper the school, the higher money now appeals to students.



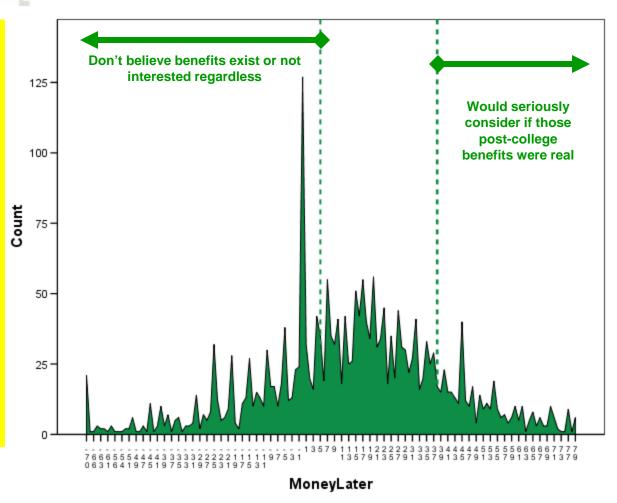
Most students do not believe that the incentives that they are reading about already are in place.

They respond saying that if such an incentive existed, they would be inclined to enroll.



Domains - Money Later

- Money later measures how students respond to future earnings, future benefits, and future civilian opportunities after serving as a commissioned officer.
- This domain is more complex in that it measures beliefs about officership and its benefits as well as delayed gratification (future civilian opportunities).
- Those scaled to the right are generally saying that they can see more long term potential and would be motivated by delayed gratification (beyond college).





Students at state schools are more likely to buy into money later. There is no difference in ethnicity in how students perceive future opportunities.

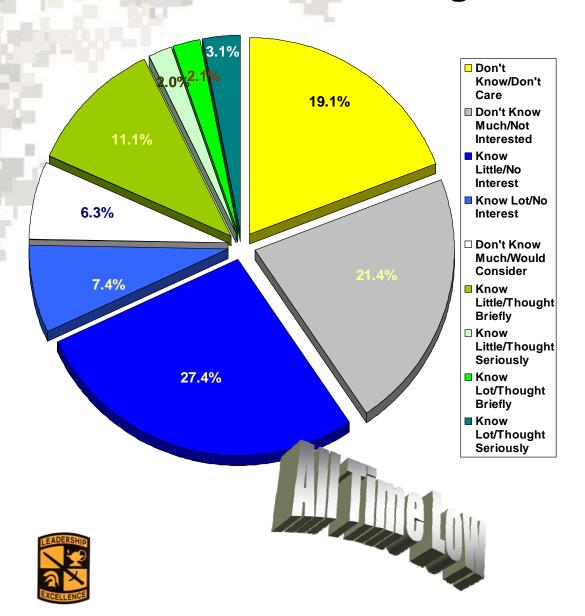


How Students Find Out About ROTC and What They Have Considered in the Past





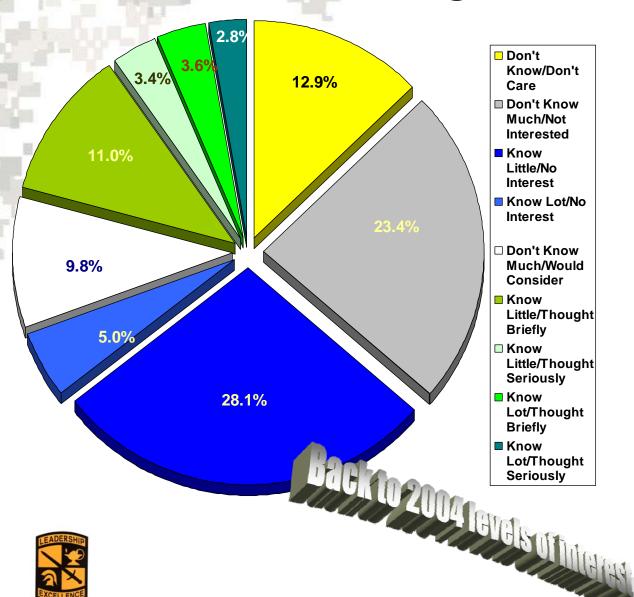
2007 Knowledge and Interest



- 2007 was the low point in responses to questions of knowledge and interest.
- Only a quarter of students held any interest whatsoever in Army ROTC.
- Over 19% said that they didn't know anything about the program and didn't care to learn anything.
- The not interested at all started at 12 o'clock on the chart to 9 o'clock, or fully 3/4rds of the population.



2009 Knowledge and Interest

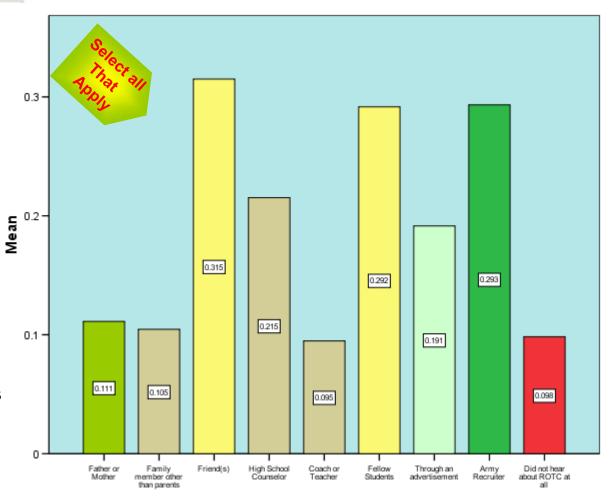


- About 13% of students neither know or care to know anything about ROTC.
- There is no interest from 12 o'clock to 8 o'clock on the chart on the left.
- 11% said that they know a little about Army ROTC and thought briefly about participating.
- Nearly 9% said that they didn't know much but might be interested.
- These numbers are significant improved from the 2005-2007 results.



How Students Learned About ROTC

- Before college students learned primarily through uncontrolled sources, their friends and fellow students.
- 29% said they learned from recruiters, up substantially from 2007 when only 23% learned from recruiters (however, 46% talked to a recruiter so half of the conversations did not include ROTC).
- Advertisement was up from 15% to 19%.
- High school counselors were way up at 21.5% versus 16% from 2007.
- Did not hear of ROTC at all was down in 2009, from 13% to 10%.

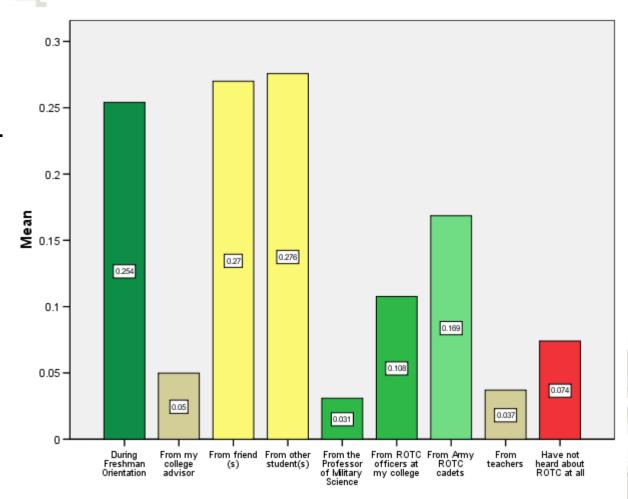






How Students Learned About ROTC On Campus

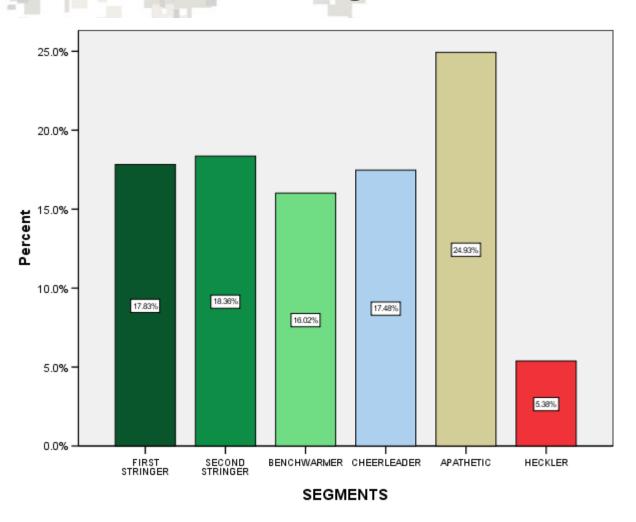
- After coming to college, students still learned primarily through uncontrolled sources, their friends and fellow students.
- Freshman orientation was way up with an increase from 17% to 25%.
- About 13% learned from Cadre.
- Hearing about ROTC from Cadets remained at the same level as 2007.
- College advisors doubled the score from 2007, but remain at 6%.
- On campus, Cadre are the lone purveyors of information on ROTC.







Segmentation - 2009



- The same segments appear in 2009 as in previous years.
- Apathetics are once again the most numerous group, and Hecklers the least.
- Compared to 2007 the ratios of First Stringers to Second Stringers and Benchwarmers are about the same.
- The composition of First Stringers was somewhat more physical than in 2007, and Second Stringers were much more physical.
- The Apathetic group was not





The Segments – First Stringers

- First Stringers most likely to think that what ROTC Cadets do is cool, and most likely to be motivated by what ROTC is all about.
 - Generally more physical than the average student and more interested in military displays
 - Somewhat more apt to say that service to country is important
 - More interested in Scholarships
 - More likely to believe that future civilian job advantages will occur after a commission in the Army
 - Somewhat less likely to have considered enlistment
 - Somewhat more likely to have sought information on ROTC
 - Not much more informed about ROTC than the average student
 - Slightly more likely to have parents or siblings with military experience





The Segments – Second Stringers

- Second Stringers just a little less interested than First Stringers.
 - Generally less physical than First Stringers and less interested in military displays, airborne, and survival training
 - Higher than average patriotism
 - Less interested in Scholarships than First Stringers, but more than Cheerleaders, Apathetics, and Hecklers
 - Somewhat more likely to believe that future civilian job advantages will occur after a commission in the Army
 - Likely to have considered enlistment and talked to a recruiter
 - Less likely to be a SAL than a First Stringer
 - Somewhat more informed about ROTC than the average student
 - Slightly more likely to have parents or siblings with military experience





Benchwarmers and Cheerleaders

- Benchwarmers high scholarship, low in belief that being an officer will increase opportunities in future civilian career.
 - While still in the prime market, Benchwarmers tend to go for scholarships and not for the idea of future benefit of officership
 - Past analysis with Cadets show that this segment, given a fouryear scholarship, is more likely to drop after one year
 - Physicality range is near that of First and Second Stringers
 - Most Benchwarmers find that the immediate benefits of ROTC are more interesting than the content of the program or the long-term benefits of officership
- Cheerleaders high scholarship, high patriotism but low athleticism.
 - Cheerleaders provide a positive boon to Cadets on campus
 - Cheerleaders have changed significantly, becoming more scholarly, but all other characteristics have remained stable





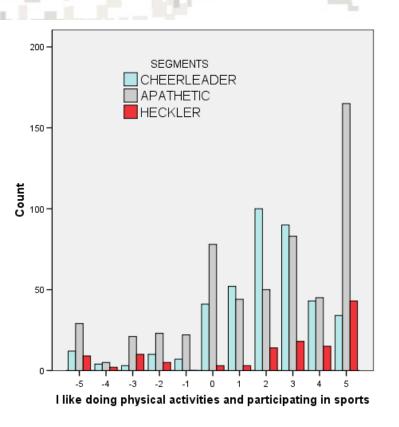
The Segments – Apathetics and Hecklers

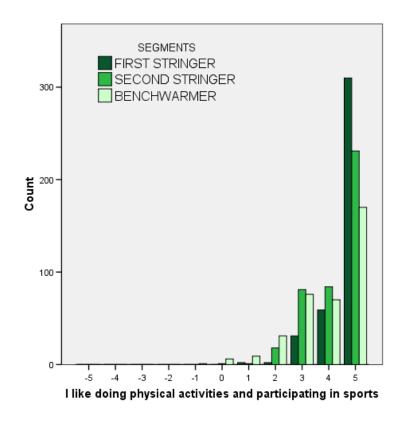
- Apathetics Don't know about ROTC and don't care to know.
 - With the exception of 2004, this has been the largest segment on campuses
 - Their knowledge and interest in ROTC is not sufficient to consider them as even tangential prospects, but they are also not likely to give negative feedback to Cadets pursuing a commission
- Hecklers ROTC is not just bad for them it is bad for everyone.
 - Fairly negative view of the military and those who serve
 - If numbers were larger, this would be a negative impact on Cadets pursuing a commission
 - Except for a spike in 2006-2007, this has consistently been the smallest segment
 - The decline from 2007 to 2009 may be attributable to the overall increase in positive feelings toward ROTC and the military





Clear Divide - physicality





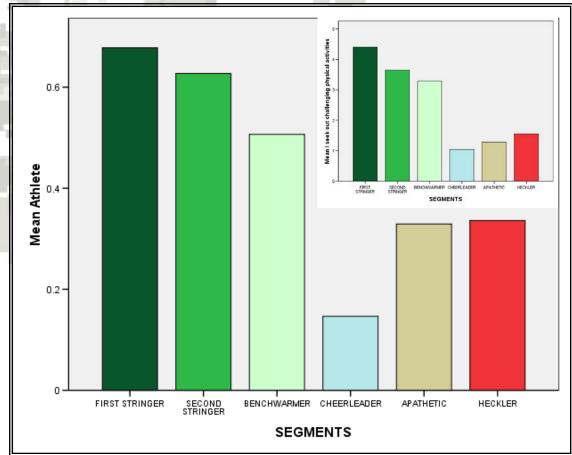


What separates those who might have an interest in doing what ROTC does from those who do not is more often interest in physicality.

Apathetics are more physical than Cheerleaders and slightly more than Hecklers, but compared to First Stringers, Second Stringers and Benchwarmers, the interest in sports and physical activities is way down.

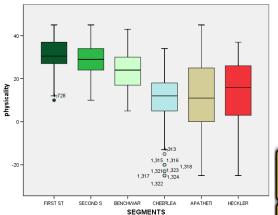


Athleticism and First Stringers



- The boxplot at right shows the tighter shot group on the entirety of the physicality domain for First Stringers.
- Apathetics, on the other hand are the most broadly dispersed and Cheerleaders have significant numbers of outliers.

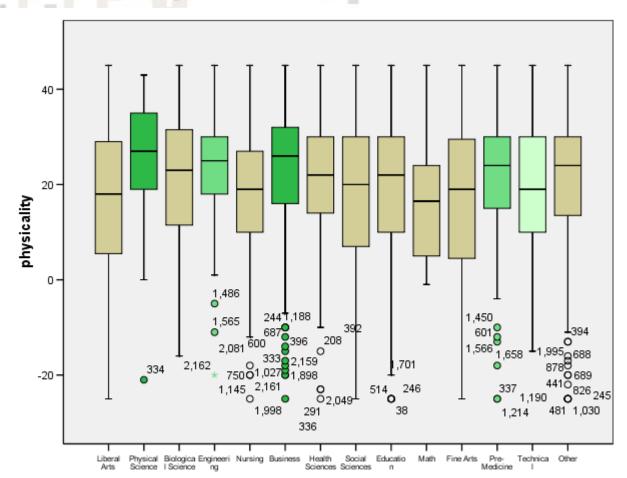
- Since the beginning of the study in 2001, those who seemed drawn to the types of activities that ROTC does also consider themselves as athletes.
- First Stringers not only see themselves as athletes, but they are more interested in challenging activities than other segments.
- Apathetics and Hecklers who claim to be athletes are more likely to say that *challenging* physical activities are not to their liking.





ARMY STRONG.

Physicality Varies by Major



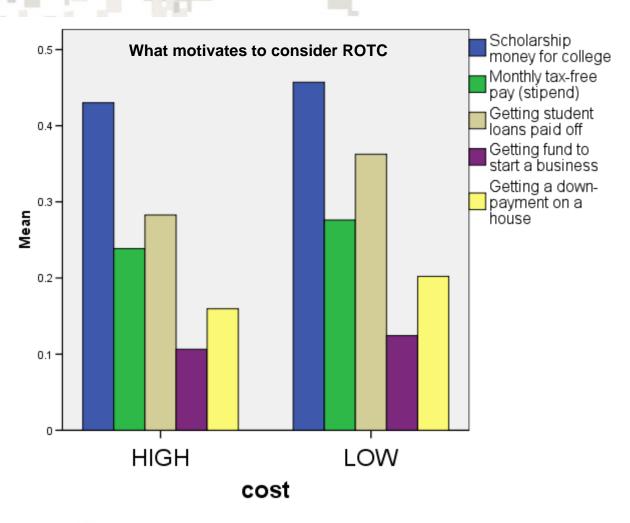
College Major or planned major area of study

- Physical Science, and business have the highest means for physicality, but business has many outliers (those with scores significantly below the average).
- Nurses are higher than expected but have many outliers.
- While technical majors considered ROTC, their overall average physical scores were below average.
- Clearly, no one major has a significant advantage in physicality and most have wide variance within the population group.





Incentives – Cost of Institution Versus Draw



- Most comparison elements were similar or nearly identical between low and high cost schools, but incentives were different.
- Scholarships, stipends and loan repayment were much more powerful at state institutions.
- The house down-payment from the Army Advantage Fund was also more interesting.
- However, Army Advantage
 Fund incentives did not come
 close to approaching
 scholarships, stipends and
 graduate school in motivating
 students.





Other Motivators – Considering Participation

Coefficientsa

	Unstand Coeffi		Standardized Coefficients		
		Std.			
	В	Error	Beta	t	Sig.
(Constant)	.601	.098		6.164	.000
Show what the Army has done in humanitarian aid	271	.177	030	-1.535	.125
Do adventure training (rafting, rappelling, climbing)	.814	.166	.110	4.920	.000
Let cadets learn how to parachute from an airplane	.767	.196	.086	3.915	.000
Let ROTC cadets do internships in industry or government	1.320	.187	.146	7.045	.000
Teach survival training	.460	.182	.056	2.533	.011
Provide tutorial assistance to help increase study skills	.720	.217	.075	3.326	.001
Give \$400-600 a month extra money to students who commit to being an Army officer	1.377	.152	.194	9.046	.000
Teach writing and other communications skills that are useful outside the Army	.283	.228	.028	1.238	.216
Give scholarship money to those who agree to stay in the program for all four years	.589	.167	.080	3.534	.000
Conduct displays of military equipment	.117	.230	.011	.509	.611

a. Dependent Variable: PriorConsideration

Adventure training (includes rafting, rappelling, and climbing), and airborne training appealed to students and especially to First Stringers. Demonstrations would do wonders in encouraging enrollments.

Internships and stipends were very strong motivators. Both of these elements should be in on-campus information packets.

Humanitarian aid has dropped in appeal to students who have considered ROTC in the past.



Positives:

- **≻Internships**
- >Adventure and challenge
- ➤ Money for college (scholarships and stipends)

Negatives:

>Humanitarian aid



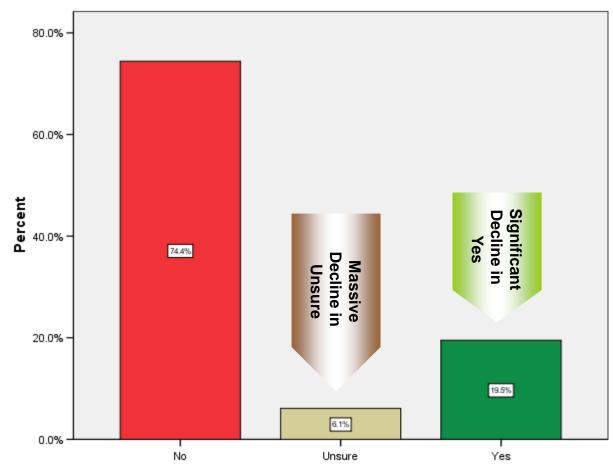
ARMY STRONG.

Backup





Army Web Site Use Way Down



I visited the Army web site on the World Wide Web

- Since beginning to ask the question about the Army Web Site in 2002, the percent saying that the had visited has fluctuated from 27-35%.
- Even in the down years of 2006/7, more than one in four students said that they had visited the site.
- Generally, about a third of students said that they were unsure of whether they had visited the site.
- In contrast, nearly 3/4ths of all students flatly said that they had never visited the Army web site.



- Students who had considered enlistment were more likely to have said "yes".
- African-Americans and Hispanics were <u>less</u> likely to have said "yes".



Students More Cautionary About Finances

From 2001 - 2007

Finances may affect my going to school until I complete a bachelor's degree

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		3563	13.5	13.5	13.5
	No	11892	45.0	45.0	58.4
	Unsure	4759	18.0	18.0	76.4
	Yes	6230	23.6	23.6	100.0
	Total	26444	100.0	100.0	

2009

Finances may affect my going to school until I complete a bachelor's degree

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	976	43.1	43.6	43.6
	Unsure	524	23.1	23.4	67.0
	Yes	739	32.6	33.0	100.0
	Total	2239	98.8	100.0	
Missing	System	27	1.2		
Total		2266	100.0		

- The percentage of students saying that they will continue their studies to completion has remained relatively constant over time at 80-90%.
- From 2001 to 2007, the number saying that finances "may affect" going to school was steady at one in five to one in four.
- Despite the students in 2009 saying that they will stay to complete, the number who perceive that there may be financial issues that could affect college is much higher.
- A nearly 40 percent increase in those agreeing that finances may affect going to school over the previous years' samples.
- The difference is significant.







Recruiting Policies and Entry Level Standards—Waiver Analysis

April 2009

Longitudinal Analysis of Waivered Recruits: Background

Objective: Address USAAC and G-1 questions about performance of waivered recruits

- FY08-09: Determine whether RA soldiers who enlist with waivers perform on par with non-waivered recruits
 - Include measures such as attrition and reasons for it, performance over time, promotion tempo, and military training performance
 - Distinguish outcomes by type of waiver
- FY09: Assess whether members of units with higher proportions of waivered soldiers experience higher rates of attrition or poor performance
 - Distinguish outcomes for waivered v. non-waivered members
 - Distinguish outcomes by type of waiver
 - Distinguish outcomes by unit characteristics, e.g., location, TOE v. TDA, branch, gender mix, deployment history

Work Falls Under Broader Project on Recruiting Policies and Entry Level Standards

Sponsors: Deputy Chief of Staff, G-1; CG, US Army Accessions Command

Objective: Identify what demographic shifts in US youth population and labor market through 2015 mean to sustaining Army recruiting. Identify changes in Army/OSD policies, programs, recruiting resources, missioning, or standards that may be appropriate to support RA enlisted production, quality, and diversity and to ensure the Army efficiently meets its current and future requirements.

Research Issues/Tasks:

- Leverage recent RAND and USAAC research on demographic shifts in US youth population and what they mean to Army recruiting
- Extend ongoing analyses of waivered recruits to assess positive and negative effects of waivers on meeting Army recruiting and retention requirements and on the force more generally
- As useful, integrate and extend research by RAND, ARI, and others on effects of current and prospective programs to identify viable alternatives/supplements to current entry standards and qualification measures
- Assess possible changes in youth education distribution in response to financial returns to higher education; in competition for youth labor pool; and in civilian employment opportunities, both overall and for specific types of jobs
- Identify changes in Army/OSD policies, programs, resources, missions, standards, or measures to efficiently support production, quality, and diversity

Waiver Analyses Reported in this Briefing

What is the waiver distribution among recruits?

Do recruits with some types of waivers have different performance outcomes than recruits without waivers (or those with other waivers)?

Are observed differences between waivered recruits and those without waivers explained by related demographic differences?

- Gender
- AFQT score
- Tier
- Number of dependents
- Marital status
- Age at accession

Waiver Analysis Outcome Variables

Using TAPDB-AE, RA Analyst, and ATRRS files, we analyzed information on:

- Success in initial entry training
- First-term attrition
- Reasons for separation during first term
- Promotion to E5
- Date for good conduct medal
- Reenlistment prohibition and reason
- Negative rank change and reason
- Suspension of favorable person status and reason

Analytical Approach

Used data allowing at least a three-year follow up of recruits

Follow up through September 2008 of FY02-FY05 recruits

Measured the incidence of each specific waiver type and the related outcomes over the full follow up period

- Also assessed more recent periods for selected outcomes (found similar results)
- Controlled analytically for accession date to account for changes in waiver patterns and rates of specific outcomes over time

Compared the outcomes for recruits with each type of waiver to those for recruits without waivers

Assessed the extent to which differences in demographic factors between the recruits with each type of waiver and recruits without waivers accounted for the outcomes

Bottom Line Up Front

Recruits with dependency, mental qualification, or medical waivers

- Show greater evidence of some early problems relative to recruits without waivers
- Have higher three-year loss rates
- Do as well as or better than recruits without waivers in the rate of serious separation-related problems
- Do not do as well as non-waivered recruits after early service if entered with weight or mental qualification waivers; do as well as or better than non-waivered recruits after early service if entered with dependency waivers

Recruits with conduct or drug waivers

- Train and perform better initially than those without waivers
- Show mixed results on three-year loss rates, but have greater losses among recruits in largest conduct waiver category or with drug waivers
- Have greater rate of serious separation-related problems
- Show evidence of early success during term of service, followed by subsequent problems, then, absent attrition, of success at 4 years; drug waiver recruits fare worse up to the 4-year point

Overview of Results Charts Features

The estimated percentage for recruits without waivers is shown at the top of each column of numbers for each outcome

- The left column for each outcome shows the basic rates for recruits with specific waivers
- The right column for each outcome shows the estimated rates after removing the effects of demographic differences between recruits with and without waivers
- The Army experiences the rates in the left column
- Comparison of results in the two columns provides insight on whether differences in outcomes between waivered vs. non-waivered recruits are due to the waiver, the demographic characteristics of recruits with that type of waiver, or both

The results charts use color-coded shading to highlight the direction and statistical significance of differences in the outcomes for waivered vs. non-waivered recruits

- Dark red means (statistically) significantly worse outcome than for recruits without waivers
- Orange means near-significantly worse outcome than for recruits without waivers
- Light green means near-significantly better outcome than for recruits without waivers
- Dark green means significantly better outcome than for recruits without waivers

Some Early Problems for Recruits with Dependency, Mental Qualification, or Medical Waivers

		N=258413	N=39335	N=254005	N=75345 GA:ENTRY LEVEL		
		% of	% of	IET GRAD 1ST	PERFORM	MANCE	
Waiver	N	Enlistees	Waivers	TIME	AND CON	IDUCT	
				69.3% 69.3%	15.3%	15.3%	
BA:Dependency of military spouse	302	0.1%	0.8%	63.7% 78.8%	13.6%	12.0%	
BB:Dependency number of dependents	519	0.2%	1.3%	59.5% 67.5%	20.3%	16.6%	
CY:Mental qualification - meets ASVAB	818	0.3%	2.1%	66.1% 69.4%	19.2%	17.5%	
HB:Medical disqualification weight	977	0.4%	2.5%	64.3% 65.7%	15.5%	15.2%	
HC:Medical disqualification disease	14690	5.7%	37.3%	67.9% 67.7%	15.1%	15.0%	



Higher Three-Year Loss Rates for Recruits with Dependency, Mental Qualification, or Medical Waivers

	N	=258413	N=39335	N=258413	N=75	345	N=75	345	N=75345 FW:FAILED
Waiver	N E	% of Enlistees	% of Waivers	36-Month Loss	DF:PREG	_	FV:CONI NO DISAB	ΓΑ	MEDICAL / PHYSICAL STANDARDS
				26.6% 26.6%	6.8%	6.8%	13.1%	13.1%	19.9% 19.9%
BA:Dependency of military spouse	302	0.1%	0.8%	37.6% 21.9%	18.2%	6.4%	8.3%	7.1%	15.3% 18.6%
BB:Dependency number of dependents	519	0.2%	1.3%	29.7% 32.6%	2.0%	1.7%	13.6%	9.5%	20.5% 15.6%
CY:Mental qualification - meets ASVAB	818	0.3%	2.1%	34.1% 27.2%	12.9%	6.6%	12.8%	13.1%	13.0% 15.2%
HB:Medical disqualification weight	977	0.4%	2.5%	30.7% 28.6%	8.5%	5.9%	16.4%	16.0%	21.9% 23.2%
HC:Medical disqualification disease	14690	5.7%	37.3%	26.7% 28.5%	5.0%	5.8%	13.7%	13.4%	29.5% 28.4%



Recruits with Dependency, Mental Qualification, or Medical Waivers Do As Well As or Better Than Non-Waivered Recruits in Rate of Serious Separation-Related Problems

Waiver		N=258413 N=393 % of % o N Enlistees Waive		N=75345 FS:IN LIEU OF TRIAL BY COURT MARTIAL		N=75345 KA:PATTERN OF MISCONDUCT		N=75345 KK:MISCON- DUCT: DRUG ABUSE		N=75345 KQ:COMMIS- SION OF A SERIOUS OFFENSE	
				7.7%	7.7%	5.1%	5.1%	7.9%	7.9%	4.8%	4.8%
BA:Dependency of military spouse	302	0.1%	0.8%	3.7%	8.3%	0.9%	3.3%	1.1%	5.8%	0.9%	3.8%
BB:Dependency number of dependents	519	0.2%	1.3%	5.4%	7.4%	0.0%	0.0%	3.3%	8.5%	2.6%	5.9%
CY:Mental qualification - meets ASVAB	818	0.3%	2.1%	6.0%	8.2%	4.9%	5.2%	4.0%	5.2%	3.2%	4.0%
HB:Medical disqualification weight	977	0.4%	2.5%	5.4%	5.9%	4.0%	4.3%	4.1%	4.5%	2.7%	2.9%
HC:Medical disqualification disease	14690	5.7%	37.3%	6.0%	6.1%	4.4%	4.6%	6.2%	6.1%	3.5%	3.6%



Recruits with Weight or Mental Qualification Waivers Do Not Do As Well As Non-Waivered Recruits After Early Service; Those with Dependency Waivers Do As Well or Better

	N=	:258413 N	N=39335	=39335 N=178301		N=178301		N=178301		1 N=133713
Waiver	N Er	% of nlistees	% of Waivers	Good Conduct Medal	No Negative Rank Change		No Reenlistment Bar		No Suspens Favorabl Person Sta	e Made E5 by
waiver				54.1% 54.1%	88.1%	88.1%	87.3%	87.3%	55.6% 55	5.6% 37.3% 37.3%
BA:Dependency of military spouse BB:Dependency number of dependents	302 519	0.1% 0.2%	0.8% 1.3%	45.1% 52.0% 52.5% 56.3%	90.9% 95.5%	84.1% 88.9%	92.2% 93.1%	91.2% 90.5%		54.3% 45.8% 45.8% 45.8% 54.7% 43.9%
CY:Mental qualification - meets ASVAB	818	0.3%	2.1%	58.2% 58.1%	88.7%	89.9%	84.5%	86.8%	51.4% 56	31.4% 38.3%
HB:Medical disqualification weight HC:Medical disqualification disease	977 14690	0.4% 5.7%	2.5% 37.3%	59.2% 59.4% 56.4% 56.7%	87.8% 88.6%	88.0% 87.8%	82.8% 86.3%	82.9% 85.7%		.9% 29.3% 28.6% 36.8% 35.2%



Recruits with Conduct or Drug Waivers Train and Perform Better Than Those without Waivers Initially

Waiver	aiver N				N=75 GA:EN LEV PERFOR AND CO	NTRY /EL MANCE
				69.3% 69.3%	15.3%	15.3%
DB:Law violations serious traffic	1906	0.7%	4.8%	78.1% 77.3%	10.8%	10.8%
DC:Law violations minor non-traffic	531	0.2%	1.3%	76.8% 75.6%	9.5%	9.9%
DD:Law violations serious non-traffic	11809	4.6%	30.0%	74.0% 73.1%	11.2%	11.3%
DE:Law violations felony adult	2126	0.8%	5.4%	76.6% 76.2%	11.2%	11.3%
DF:Law violations felony juvenile	1304	0.5%	3.3%	77.7% 75.6%	8.5%	8.9%
DRUG WAIVERS	3925	1.5%	10.0%	74.1% 72.7%	9.3%	9.5%



Mixed Results on Three-Year Loss Rates for Recruits with Conduct Waivers, But Greater for Largest Conduct Waiver Category and for Recruits with Drug Waivers

	N	=258413	N=39335	N=258413	N=75	345	N=75345	N=75345 FW:FAILED
Waiver	N E	% of Enlistees	% of Waivers	36-Month Loss	DF:PREG	_	FV:CONDITION: NOT A DISABILITY	MEDICAL / PHYSICAL STANDARDS
				26.6% 26.6%	6.8%	6.8%	13.1% 13.1%	19.9% 19.9%
DB:Law violations serious traffic	1906	0.7%	4.8%	22.5% 27.6%	1.9%	5.8%	14.3% 14.1%	18.2% 15.2%
DC:Law violations minor non-traffic	531	0.2%	1.3%	28.9% 30.5%	2.7%	9.3%	11.4% 12.2%	17.4% 15.9 %
DD:Law violations serious non-traffic	11809	4.6%	30.0%	29.4% 32.9%	2.2%	5.7%	9.8% 9.9%	17.8% 15.7%
DE:Law violations felony adult	2126	0.8%	5.4%	25.3% 28.6%	1.4%	4.3%	10.8% 11.0%	16.2% 13.7%
DF:Law violations felony juvenile	1304	0.5%	3.3%	26.4% 29.6%	4.2%	12.8%	7.6% 7.9%	17.9% 16.7%
DRUG WAIVERS	3925	1.5%	10.0%	35.1% 38.6%	1.8%	4.5%	7.5% 7.7%	14.0% 12.6%



Greater Rate of Serious Separation-Related Problems for Recruits with Conduct or Drug Waivers

		N=258413	N=39335	N=75345 FS:IN LIEU OF	N=75345	N=75345	N=75345 KQ:COMMIS-	
Waiver	N	% of Enlistees	% of Waivers	TRIAL BY COURT MARTIAL	KA:PATTERN OF MISCONDUCT	KK:MISCON- DUCT: DRUG ABUSE	SION OF A SERIOUS OFFENSE	
				7.7% 7.7%	5.1% 5.1%	7.9% 7.9%	4.8% 4.8%	
DB:Law violations serious traffic	1906	0.7%	4.8%	9.3% 8.9%	5.2% 6.3%	15.3% 14.6%	8.5% 8.8%	
DC:Law violations minor non-traffic	531	0.2%	1.3%	10.7% 8.6%	10.1% 9.0%	17.6% 14.8%	7.7% 6.5%	
DD:Law violations serious non-traffic	11809	4.6%	30.0%	10.1% 9.1%	8.1% 8.6%	17.4% 15.9%	8.2% 7.9%	
DE:Law violations felony adult	2126	0.8%	5.4%	11.5% 10.4%	5.8% 6.7%	17.3% 16.4%	7.3% 7.3%	
DF:Law violations felony juvenile	1304	0.5%	3.3%	11.8% 10.8%	6.2% 5.5%	14.8% 12.6%	8.3% 7.1%	
DRUG WAIVERS	3925	1.5%	10.0%	11.8% 10.6%	7.1% 6.9%	28.3% 25.4%	10.7% 9.8%	



Recruits with Conduct Waivers Show Early Success, Subsequent Problems, Followed, Absent Attrition, By Success at 4 Years; Drug Waiver Recruits Fare Worse

	N=	:258413 I	N=39335	N=178301	N=17	8301	N=178301 No	N=178301 No Suspension	N=133713
Waiver	N E	% of nlistees	% of Waivers	Good Conduct Medal	No Ne Rank C	•	Reenlistment Bar	Favorable Person	Made E5 by 48 months
				54.1% 54.1%	88.1%	88.1%	87.3% 87.3%	55.6% 55.6%	37.3% 37.3%
DB:Law violations serious traffic	1906	0.7%	4.8%	56.6% 57.4%	86.1%	82.2%	87.4% 86.0%	58.1% 53.0%	47.2% 42.3%
DC:Law violations minor non-traffic	531	0.2%	1.3%	63.0% 62.5%	83.9%	84.0%	85.9% 86.1%	51.3% 50.7%	44.3% 43.7%
DD:Law violations serious non-traffic	11809	4.6%	30.0%	58.5% 58.7%	82.2%	79.9%	85.0% 84.4%	51.8% 49.0%	39.5% 37.0%
DE:Law violations felony adult	2126	0.8%	5.4%	59.3% 59.9%	83.0%	79.3%	85.9% 84.9%	54.1% 50.1%	40.3% 36.2%
DF:Law violations felony juvenile	1304	0.5%	3.3%	59.9% 59.4%	84.1%	84.0%	86.7% 86.7%	56.2% 55.5%	35.4% 35.2%
DRUG WAIVERS	3925	1.5%	10.0%	58.9% 58.8%	76.3%	74.8%	81.9% 81.5%	41.5% 39.8%	35.3% 34.0%

NOTE: The percentage estimates have been adjusted to remove individual differences in outcomes due to differences in recruits' accession date and in the length of time beyond three years that they can be observed. The percentages shown are the estimated rates that would be expected given the same accession date at the end of the follow-up period. The right column of each pair shows the estimated rates after removing the effects of demographic differences between recruits with the indicated waiver and those without waivers. The estimated percentages for recruits without waivers are shown at the top of each column of outcome numbers. Color coding: dark red means (statistically) significantly worse outcome than for recruits without waivers; orange means near-significantly worse outcome; light green means near-significantly better outcome; and dark green means significantly better outcome than for recruits without waivers.



Summary

Recruits with dependency, mental qualification, or medical waivers

- Some early problems
- Higher three-year loss rates
- Do as well as or better than recruits without waivers in rate of serious separation-related problems
- Do not do as well as non-waivered recruits after early service if entered with weight or mental qualification waivers; do as well as or better than non-waivered recruits after early service if entered with dependency waivers

Recruits with conduct or drug waivers

- Train and perform better than those without waivers initially
- Show mixed results on three-year loss rates, but have greater losses for largest conduct waiver category and for recruits with drug waivers
- Greater rate of serious separation-related problems
- Show early success, subsequent problems, followed, absent attrition, by success at 4 years; drug waiver recruits fare worse up to 4-year point

Next Steps

ICW HQDA G-1 and USAAC, refine analyses of outcomes for recruits with waivers relative to those of non-waivered recruits

Assess whether members of units with higher proportions of waivered soldiers experience higher rates of attrition or poorer performance

U.S. Army Foreign Language Recruiting Initiative (FLRI)

Rod McCloy

Presented to:

Accessions Research Consortium (ARC) U.S. Army Accessions Command (USAAC)

September 2, 2009



Overview

ATES OF

- Background
- Details of the Current Study
- Selected Results
- Conclusions



Current HumRRO Project Staff



- Ms. Ani S. DiFazio
 - Project Director
- Dr. Dan J. Putka
 - Analyst
- Dr. Rod McCloy
 - Senior Technical Advisor





Background



Program Description

- POC: Dr. Naomi Verdugo
 - Office of the Assistant Secretary of the Army.
- Premise
 - Native foreign language speakers may score low on the Armed Services Vocational Aptitude Battery (ASVAB) due to lack of English proficiency, rather than lack of aptitude.
- FLRI Process
 - Identify high-aptitude native foreign language speakers based on tests (including a FLRI screening test) administered at application
 - Increase English proficiency of FLRI recruits through English-as-a-Second Language (ESL) training
 - Re-test ESL graduates on ASVAB
- FLRI Objective
 - Expand recruiting market



Program Description (cont.)



- Entry Requirements
 - AFQT Category IV-A (percentile scores 21-30)
 - English Comprehension Level Test (ECLT)
 score between 40 and 74
 - Special FLRI Screening Test
- Applicants
 - Only Spanish speakers originally
 - Spanish Wonderlic® Personnel Test (SWPT) used as FLRI screening test
 - Army wanted to make program available to all foreign-language speakers.



FLRI Program Expansion



- Use a language-neutral (non-verbal) test as the FLRI screen
 - Assembling Objects (AO) from ASVAB
 - Raven's Progressive Matrices (RPM)
- Army selected AO (cut score = 54)
 - AO and RPM performed similarly
 - AO already administered at MEPS
 - Began use during fall/winter of 2006-7
 - Collected RPM data when students first arrived at ESL to have a ready fall-back position in case AO did not perform as expected



Summary of FLRI Tests Examined in This Evaluation

TOF 1775 1775 1775

- Armed Forces Qualification Test (AFQT)
 - Participants must score in Category IV-A
- English Comprehension Level Test (ECLT)
 - Participants must score between 40 and 74
- Assembling Objects (AO)
 - Strong measure of general spatial reasoning; has smaller sex differences relative to other spatial tests (Project A)
 - Participants must score 54 or higher
 - Current FLRI screener
- Raven's Progressive Matrices (RPM)
 - 60 items in 5 12-item sets
 - Administered as soon as participants arrived at ESL training
- Spanish Wonderlic® Personnel Test (SWPT)
 - 12-minute, 50-item test of cognitive ability; administered via Spanish text
 - Previous FLRI screener



ESL Training



- Two schools
 - Defense Language Institute English Language Center (DLIELC) at Lackland AFB
 - ARNG Language School at Fort Allen, Puerto Rico
- Graduate from ESL when score 75 or more on the ECLT
 - Waivers of this requirement are sometimes given
- Take the Armed Forces Classification Test (AFCT) after graduation
 - Post-enlistment version of ASVAB
- GT Preparation Course
 - Always part of the Fort Allen ESL program
 - DLIELC formally began GT Preparation training in June 2008.
- A "successful" FLRI recruit
 - One whose post-ESL AFQT score (and aptitude category) is higher than the MEPS AFQT score (and category)





Details of the Current Study



Goals of the Study



- Evaluate validity of AO and RPM as FLRI screening tests
- Evaluate impact of GT Prep on post-ESL AFQT scores
- Model predictors of valued outcomes
- Summarize attitudes of participants and recruiters regarding FLRI
 - Results pending



FLRI Outcomes (Criteria)



- Post-ESL AFQT Score
 - Analyses limited to ESL graduates
- AFQT Score Change
 - Difference between MEPS AFQT score and post-ESL AFQT score
- AFQT Category Change
 - 1/0 variable (1 = post-ESL AFQT category of III-B or higher)
- ESL Graduation
 - 1/0 variable (1 = graduate)
- Post-ESL Attrition
 - Analyses pending



Research Questions

- TOP TATES OF
- How much do AFQT scores improve from MEPS to post-ESL?
- How well do AO and RPM predict valued FLRI outcomes
 - Post-ESL AFQT scores
 - AFQT score change (from MEPS to post-ESL)
 - AFQT category change (from MEPS to post-ESL)
 - ESL graduation
 - Post-ESL attrition (analyses pending)



Research Questions (cont.)

- How do AO and RPM compare to SWPT in terms of predicting valued outcomes?
- How does the GT prep course affect post-ESL AFQT scores, changes in AFQT scores/categories, and differences in performance across schools?
- What factors predict valued outcomes for ESL participants?



Other Research Questions Not Discussed Today

- Does AO/RPM predictive power depend on other variables (sex, school, prep, weeks in ESL, MEPS AFQT, differences between ECLT scores from MEPS to initial testing at DLIELC)?
- How do stakeholders (participants, recruiters) view FLRI? (analyses pending)



Samples

- TOF 17775 17775 17775 17775
- S1: Full AO-Screened Sample (n = 834)
 - Participants screened with AO
 - Do not have SWPT scores
 - Some have RPM scores
- S2: AO-Screened RPM Sample (n = 422)
 - Subset of S1
 - Those who have both AO and RPM scores
- S3: SWPT-Screened AO Sample (*n* = 472)
 - Screened on SWPT
 - Have AO scores from Army archival data collected from MEPS administration
- Used S1 for maximal information re: AO
- Used S2 and S3 for comparisons of AO with RPM and SWPT, respectively





Selected Results



Caveat



Results presented here are not yet finalized



Descriptive Statistics: Criteria



Approximately 60% of FLRI participants increase their AFQT Category to III-B or higher

higher		Sample	•			Sampl	Л		Sample VPT-Scro AO Sam	eened
Sample/Criterion			SD	•	N	<u> </u>	SD		M	SD
Full Sample										
Post-ESL AFQT Score	765	32.05	13.80		388	32.30	14.72	409	32.97	11.70
AFQT Score Change	765	6.92	13.85		388	7.29	14.81	407	7.85	11.72
Large differences bet	MAAI	n ech	nole	in	ΔΕ	OT c	hano	ıρς	(.58)	.49
Large differences bet	VV CCI		10013	<u> </u>	/\l		riariy	<u> </u>	(.88)	.33
DLIELC Only										
Post-ESL AFQT Score	649	30.10	12.65		277	28.03	12.46	199	29.63	10.27
AFQT Score Change	649	4.87	12.59		277	2.84	12.32	199	4.49	10.19
AFQT Category Change	649	58	.49		277	.48	.50	199	.50	.50
ESL Graduation	709	(92)	.28		303	(91)	.28	228	(.87)	.33
Ft. Allen Only						\bigcirc				
Post-ESL AFQT Score	116	43.01	14.86		111	42.96	14 <i>5</i> 7	210	36.13	12.10
AFQT Score Change	116	18.41	14.97		111	18.40	14.73	208	11.06	12.20
AFQT Category Change	116	.79	.41		111	.79	.41	208	.66	.48
ESL Graduation	125	(94)	.25		119	(94)	.24	244	(.88)	.33



Bivariate Relations: Screening Tests and Outcomes



			ost-ES QT Sc			QT Sc hange		A	FQT (Cha		ry 	1	ESL Gr	aduatio	on
Sample	Test	N	r	r _e	N	r	r_c	N	r	đ	d_c	N	r	đ	d_c
1	AO	765	.07	(14)	765	.07	(14)	765	.07	.13	(26)	834	.00	.02	.04
2	AO	388	.08	/.16 \	388	.09	/.17	388	.09	.19	(38)	422	.04	.16	.32
2	RPM	388	.15	18	388	.15	18	388	.14	.28	36	422	06	21	12
3	AO	407	.15	.17	407	.17	1.19	407	.12	.25	30	472	.00	.00	.13
3	SWPT	407	.23	.41	40 7	.23	.27	407	.18	.36	.69	472	.01	.03	.06

AO provides acceptable prediction of valued FLRI outcomes

Little difference in predictive power of AO and RPM

Large difference in predictive power of AO and SWPT



% of ESL Graduates Scoring in Lower, Same, or Higher AFQT Category



		Sar	nple 1:			Saı	mple 2:			Sa	mple 3:			
		Full AO-Sc	reened Sa	ımple	A	AO-Screene	d RPM S	ample		SWPT-Scree	ened AO S	O Sample		
		Lower		Higher		Lower		Higher		Lower		Higher		
		than Cat	Cat	than Cat		than Cat	Cat	than Cat		than Cat	Cat	than Cat		
Sample	N	IV-A	IV-A	IV-A	N	IV-A	IV-A	IV-A	N	IV-A	IV-A	IV-A		
Overall	765	24.2	14.9	60.9	388	26.5	16.2	57.2	407	13.8	28.0	58.2		
DLIELC Only	649	27.3	15.1	57.6	277	34.7	17.0	48.4	199	19.6	30.2	50.3		
Fort Allen Only	116	6.9	13.8	79.3	111	6.3	14.4	79.3	208	8.2	26.0	65.9		

AO screen associated with more in lower category and fewer in same category than SWPT screen

Few PR participants receive lower AFQT category; a large majority increase their category score



Post-ESL AFQT Scores and Change Scores by GT Preparation Course Status and School



Compared to PR participants . . .

	P	ost-ESL	AFQT S	core			FQT e Change	
School	N	M	SD	đ	N	M	SD	d
DLIELC	649	30.10	12.65	-0.90	649	4.87	12.59	-1.04
No GT Prep	299	26.11	12.11	-1.31	299	0.93	12.11	-1.35
GT Prep	350	33.50	12.12	-0.74	350	8.23	12.02	-0.79
Fort Allen	116	43.01	14.86		116	18.41	14.97	

DLIELC participants perform about 1 sd lower on Post-ESL AFQT Score and AFQT Score Change

Those without GT prep perform about 1.3 sd lower

GT prep reduces the performance gap by about 45%; even so, a 3/4 sd discrepancy remains



Post-ESL AFQT Category by GT Preparation Course Status and School



		Lower than Cat	Cat	Higher than Cat
School	N	IV-A	IV-A	IV-A
DLIELC	649	27.3	15.1	57.6
No GT Prep	299	38.5	22.4	39.1
GT Ртер	350	17.7	8.9	73.4
Fort Allen	116	6.9	13.8	79.3

Significant performance difference across schools . . .

... but GT Prep ameliorates the situation considerably (especially higher-scoring participants)



"Fake FLRIs"

TATES ON THE

- Individuals with sufficient English fluency
- Score intentionally low on MEPS ECLT
- Show meteoric increase on initial ECLT at ESL
- Use FLRI to enter Army despite low AFQT
- ESL likely not suitable remediation for them
- Could downwardly bias indices of program success and waste resources
- 35.5% exhibited sufficiently extreme increases on the ECLT from MEPS to ESL
 - 296 of 683 DLIELC recruits in full AO sample with both nonmissing ECLT scores
 - Some score discrepancies could be due to MEPS ECLT testing issues/anomalies



Fake FLRIs (cont.)

Initial DLIELC-MEPS	Percentile of ECLT	
ECLT Difference	Difference	AO OR
-8	5	1.561
-1	10	1.407
0	15	1386
0	20	1386
2	25	1345
5	30	1.287
8	35	1.230
11	40	1.177
13	45	1.142
16	50	1.092
18.2	55	1.057
19	-	1.045
20	-	1.029
21	60	1.014
22	-	0.999
23	-	0.984
24	65	0.970
26	70	0.941
29	75	0.900
32	80	0.861
34	85	0.836
37	90	0.799

0.742



Prediction of AFQT
Category Change
with AO as a
Function of Initial
DLIELC-MEPS
ECLT Score
Differences

(OR = Odds Ratio)

AO shows positive prediction of category change for those with smaller discrepancies in ECLT score between MEPS and DLIELC

Negative relation for higher discrepancies





Conclusions



Conclusions

STATES OF

- FLRI program successful
 - Nearly 60% of participants increase their AFQT Category from IV-A to III-B or higher
- ESL graduation rates uniformly high
- Little discrepancy between predictive power of AO and RPM
 - Use of DoD's AO means no added monetary or administration time requirement
- GT Prep effective at improving post-ESL AFQT performance, but school differences remain
- Screening for "Fake FLRIs" recommended to ensure validity of selection process





Questions?





Behavioral Health Assessment for Soldiers

LTC Ingrid Lim
Command Psychologist
USAREC



Background

- Increases in suicidal behavior in Initial Entry Training and other areas, prompted Army leadership to reconsider utility of a mental health screening instrument.
- Senior military behavioral health professionals, convened by the TRADOC Surgeon have reviewed and made a recommendation of an updated screening instrument.
- The behavioral health professionals recommended adding questions for use by medical examiners at MEPS, and that further study be conducted on relationship between fitness and suicide.

Problem Statement

- Reduce the number of high-risk individuals entering the Army.
- Reduce the "unfavorable" attrition in the training bases.
- Revise AR 601-270 (MEPS) to establish the use of a psychological screening tool at MEPS to evaluate emotional, behavioral, and social suitability for military service.

<u>AR 601-270</u> requires a psychiatric examination will be made whenever there is reason to question applicant's emotional, social, or intellectual adequacy for military service. Applicants will be referred to a psychiatrist **when deemed necessary** by the Chief Medical Officer.

Initial Approach

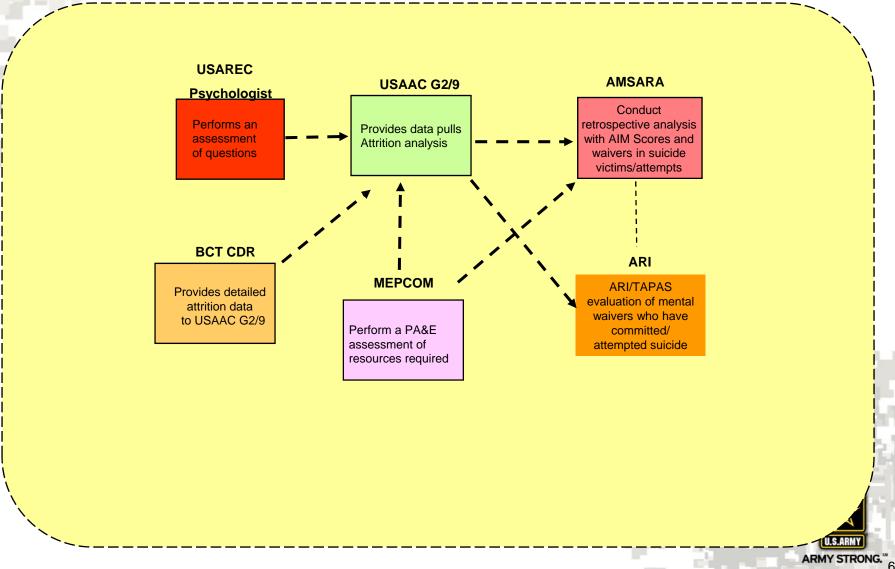
- Integrate additional questions to the medical history and examination process at the MEPS to include:
 - Depression Screen (4 questions)
 - Alcohol Screen (3 questions)
 - Self-mutilation (1 question)
 - Suicidal behavior (1 question)
 - Impulsivity (1 question)
 - Sleep disturbance (1 question)

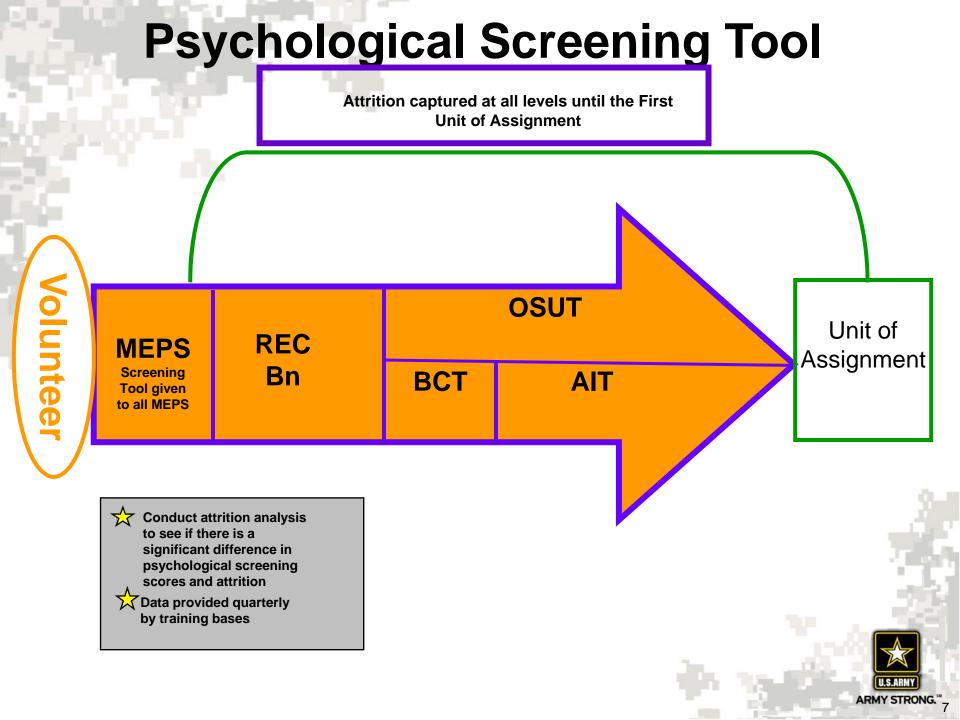


Interim Approach

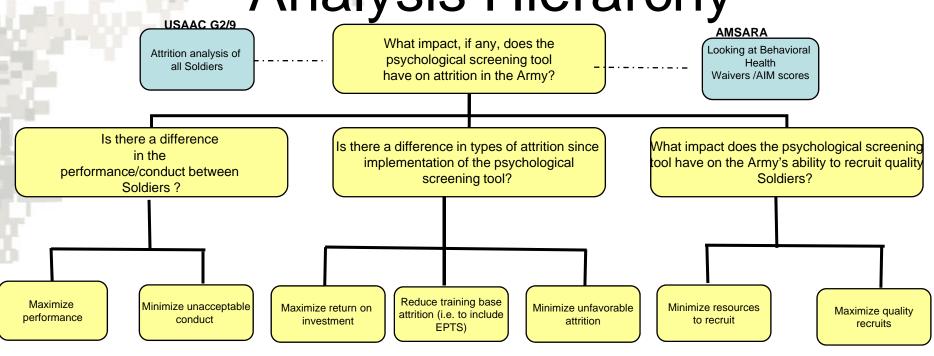
- Study and analyze the relationship between occupational fitness and high-risk behaviors to include:
 - Establish working relationships and data use agreements among ARI, AMSARA, Army Suicide Prevention Program, CHPPM Behavioral Social Health Program's Suicide Analysis Cell, and USAAC G2/9.
 - Conducting a retrospective analysis to assess if there is a significant difference in ARI's Assessment of Individual Motivation scores and accession mental health/moral waiver in individuals who have committed/attempted suicide since 2005. (AMSARA).
 - Study the Tailored Adaptive Personality Assessment Screen (TAPAS) to determine if there are aspects of the test that are associated with an increased risk of occupational dysfunction (ARI/AMSARA).
 - Conduct legal review.
 - Determine resource requirements (i.e. manpower, TDY, databases, etc.).
- Further study the relationship between unfavorable attrition and conduct, medical and dependency waivers (USAAC G2/9).
 - Establishing a working relationship and data use agreements about TRADOC training bases and USAAC G2/9. This will allow on to drill down on the attrition data with greater fidelity.
 - Conduct data reduction and analysis to determine if there is a significant difference between Soldiers granted waivers and unfavorable attrition.

USAAC G2/9 Integration





Analysis Hierarchy



A holistic analysis approach will be taken to determine the impact of the screening tool on the Army. AMSARA will focus on retrospective analysis to assess if there is a significant difference in the ARI's Assessment of Individual Motivation scores and accession mental/health conduct waiver in individuals who have committed/attempted suicide since 2005.



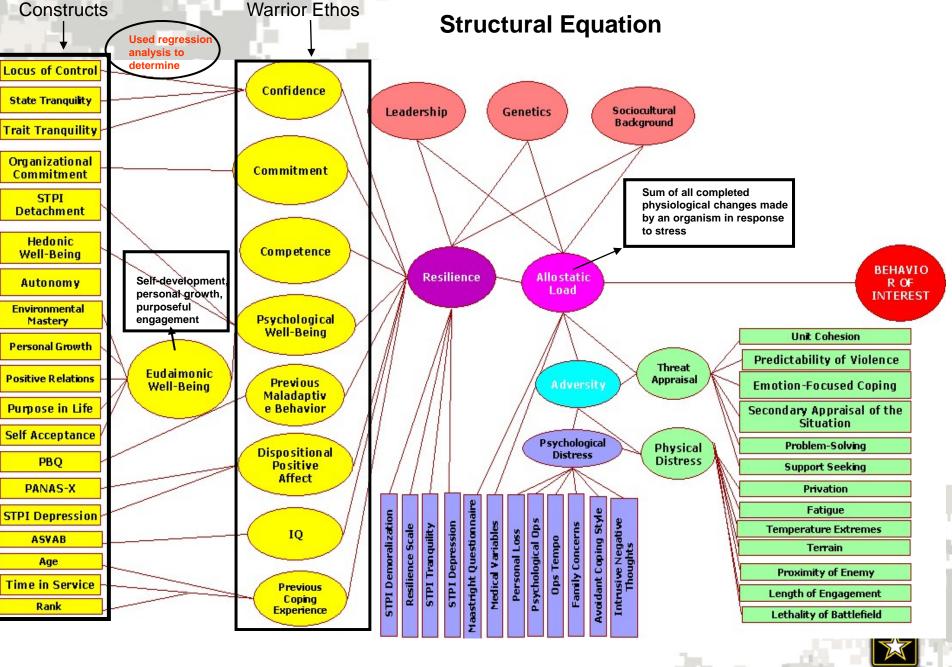
Experiment Development Approach

- Phase I Develop the questions
- Phase II Data Collection Plan
 - Data elements will be provided in the Concept Experimentation Plan.
 - Data will be collected over a one-year period at the MEPS and TRADOC training bases.
 - Data reduction and analysis will be conducted by AMSARA and USAAC G2/9.
- Phase III Final Report



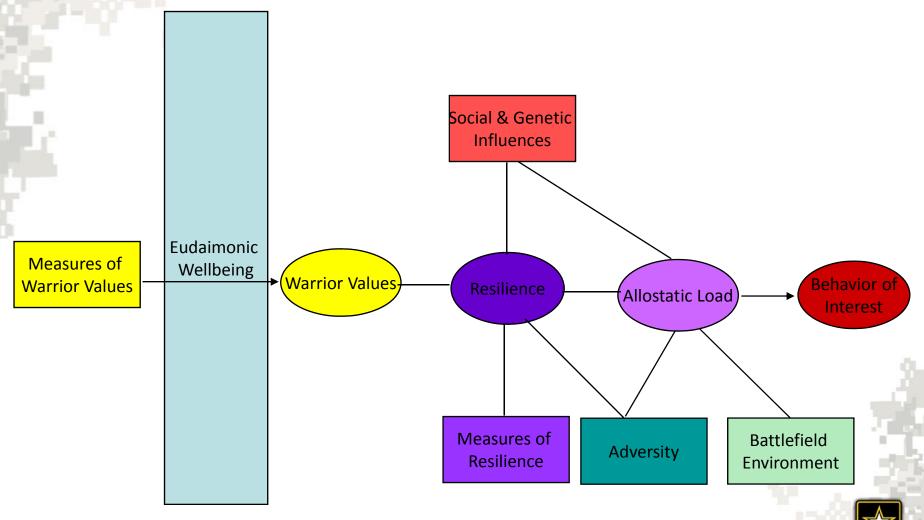
Way Ahead







SIMPLIFICATION OF INITIAL STRUCTURAL MODEL



Goals & Objectives

Dr. Stanczak Study

- Establish empirically-derived standards of psychological fitness for duty.
- Devise a procedure for screening potential recruits for psychological fitness prior to enlistment.
- Devise a reliable, valid, and legally acceptable measure for periodic psychological evaluation over the course of a Soldier's career.
- To establish psychological fitness baselines against which future changes in a Soldier's mental status may be gauged.
- To reduce the rate of suicides and other maladaptive behaviors.
- Identify those Soldiers who chances of success will be enhanced by a rational allocation of mental health and supportive resources.
- To institute a rational and criterion-referenced program to increase Soldier's resilience and adaptability.
- To predict Soldiers' behaviors in training and operational settings.
- To assess the effectiveness of psychological treatment.



Methodology & Approach

Dr. Stanczak Study

- Model of behavioral reliability will be tested
 - Structural equation modeling will be used and tested after data is collected.
 - Results correlated with early adverse attrition.
 - Metrics will be refined.
 - Method for evaluating psychological fitness will be developed allowing accurate prediction of early adverse attrition before recruits arrive at the Reception Battalion.

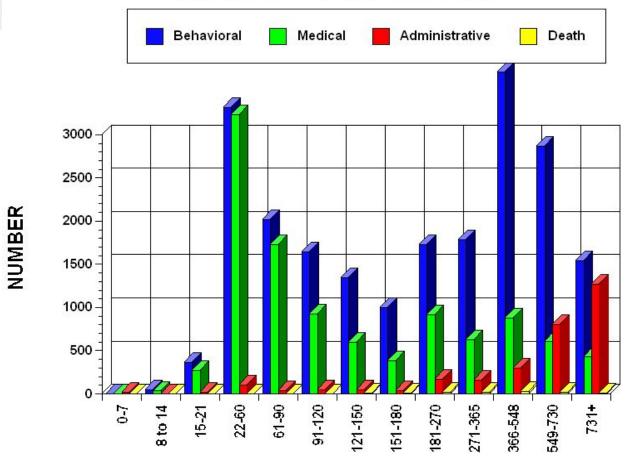
Validation of Measures

- Collection of psychometric data on enlisted accessions at Ft Jackson and 1000 enlisted accessions at each of the other training bases.
- Collection of data of all incoming USMA students.
- Collection of medical and psychometric data on 300 basic trainees at Ft Jackson.

Purpose: Examine the hypothesized relationships between variable/constructs in the preliminary model.



TYPE OF EARLY ADVERSE ATTRITION BY TIME IN SERVICE - FY00 COHORT

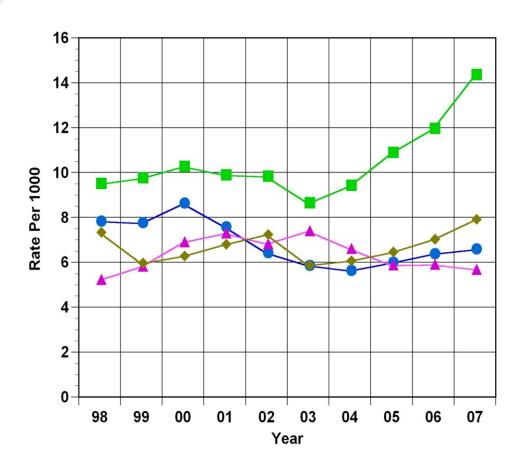


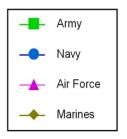
DAYS TO DISCHARGE

Data Source: MEDCOM



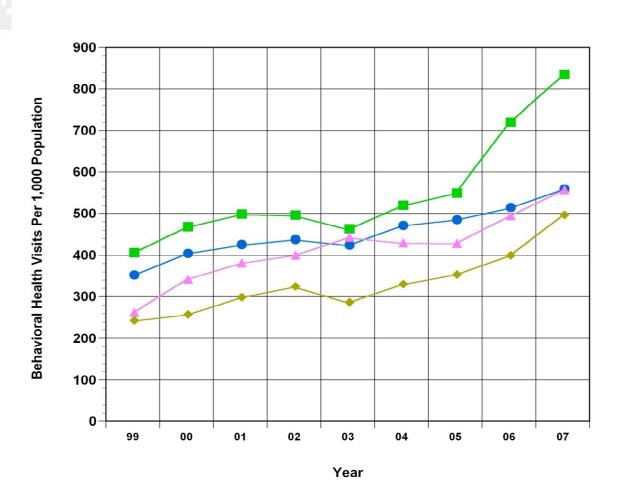
RATES OF PSYCHIATRIC HOSPITALIZATIONS BY SERVICE **AND YEAR**





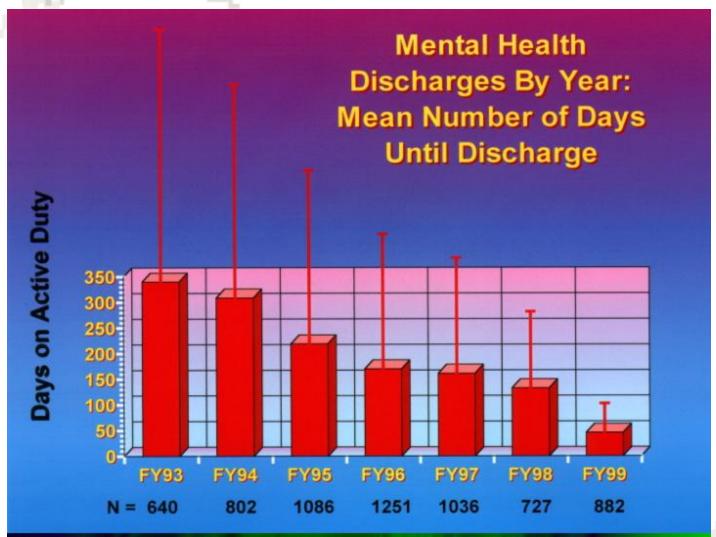


BEHAVIORAL HEALTH VISITS BY SERVICE AND YEAR





EFFECT OF AIR FORCE SCREENING PROCESS



Potential Benefits

- Pecuniary savings
 - Training expenses
 - Medical services
 - Recruiting costs
- Nonpecuniary savings
 - Force stability
 - Force health
 - Increased readiness
 - Improved morale
 - Better unit cohesion



Additional Benefits

- Multiple evaluation over career
- Developmental changes evident
- Allow better evaluation for selection for special duties
 - Drill Sergeant
 - Recruiters
 - Special Operations
 - White House Communication



Challenges

- Who will fund this study?
 - TRADOC
 - AAC
 - Department of the Army
- Who will be responsible for managing the study?
 - ???
- MEPCOM has joint responsibilities
 - Difficult to make changes
 - Limitations to their network
 - Increase cost at MEPS for small changes
- TRADOC has multiple initiatives going at BT sites
 - Confounds?
 - Impact on training?



Questions

Ingrid Lim
Command Psychologist
USAREC
502-626-0135



Challenge & Motivation:

How New BCT Soldiers Respond to Tough Training



stephanie.muraca@us.army.mil

Directorate of Basic Combat Training/Experimentation & Analysis Element, FT Jackson ATC (DBCT/EAE)

Problem Statement

- Unflattering portrayals of New Soldiers in the Media
- Confusion
 about new
 Recruiting
 guidelines/
 screening tests

DSs and Company COs believe that New Soldiers are physically, emotionally, socially, and intellectually WEAKER than Soldiers who came before

Fear of Overwhelming New Soldiers:

- DSs "Hold back"
- Lower Standards
- FewerConsequences
- Lower Intensity
- Relaxed Training Environment

Research Question

How can BCT Leadership maximize Confidence, Motivation, Commitment, and Respect in BCT Soldiers?

In order to thrive, do New Soldiers need a more relaxed, less stressful training environment, or will they rise to the challenge of a physically and mentally demanding BCT?

 Do all New Soldiers respond to "challenge" in the same way, or will some Soldier types succeed while others fail?

e.g., Soldiers with high stress-tolerance vs. low stress-tolerance, Soldiers entering BCT with high self-confidence vs. Soldiers entering with low selfconfidence



Research Protocol *study/findings replicated JUL 09

When: October – December 2008 Where: 2-39th IN BN

n = 1,212 BCT Soldiers

Incoming Soldier Survey (Reception Battalion)

Outcome Survey (End of Cycle)

Demographics

Age, Sex, Education, Marital Status, Dependent Children, Civilian Employment & Activities, Family Members in Service/Prior Service

Incoming Soldier Attributes

General Motivation, Motivation to Pursue Success/Avoid Failure, Achievement Motivation. Locus of Control, Self-Confidence, Self-Efficacy, Army ID/Commitment (prospective), Peer Leadership, Stress Tolerance, Team-Work Orientation

Expected Difficulty of BCT & Expected Accomplishments

Expectation of Expending Mental, Physical, Social, and Emotional Effort/Achieving Mental, Physical, Social and Emotional Growth

Pre-BCT Preparation

Weight Gain/Loss, Effort to Improve Physically, Effort to Improve Mentally (learn more about Army, BCT, MOS, Soldier knowledge)

Reason for Enlisting

Perceived Difficulty of BCT (Challenge)

Mental, Physical, Social, and Emotional Effort Expended

Army-Specific Self-Confidence

Combat Skills, Mental & Emotional Preparedness, General Soldier Knowledge

Army Attributes & Values

Motivation, Respect, Pride & Professionalism, Integrity, and Accountability

Evaluation of Drill Sergeants

Toughness, Professional Engagement, Personal Nature/Warmth

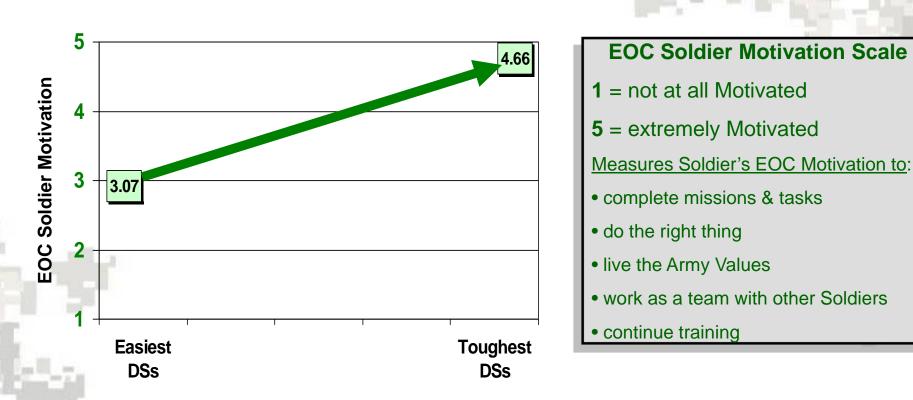
Evaluation of Other Soldiers in Platoon

Relative Knowledge, Ability, and Skills

Army Identification & Commitment

Empirical Findings (replicated JUL 09)

EOC Soldier Motivation*



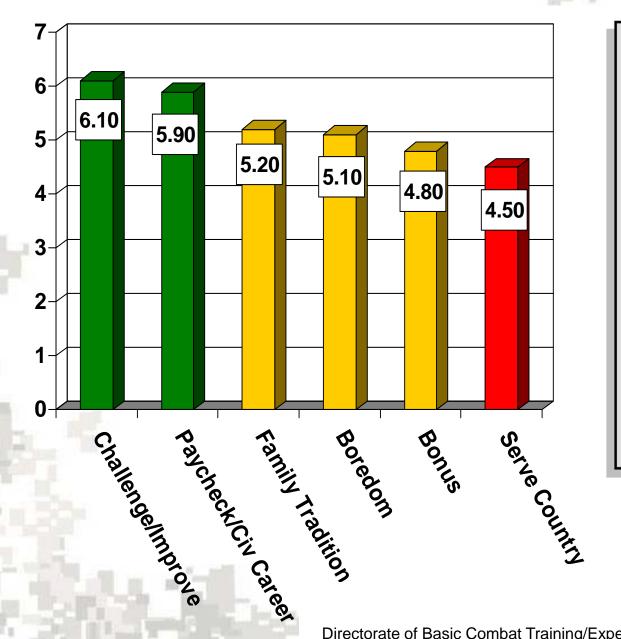
At EOC, the Soldiers with the toughest Drill Sergeants were the most motivated.

^{*}Stepwise Regression: EOC Motivation on Drill Sergeant Toughness & Engagement Scales, controlling for Soldier demographics, incoming attributes and attitudes, and BCT preparedness (solution holds all control variables at their respective means). adjR²=.32; F(8, 801)=47.53

Why Soldiers Enlist (n~1,200)

Ī		MALES (66.9%)	FEMALES (33.1%)	TOTAL
ı		1220 (001079)	1 2 12.20 (001.179)	
	To support myself/my family	29.9%	25.2%	28.5%
I	To build foundation for civilian career	27.6%	30%	28.4%
	To challenge/improve myself	19.8%	24.1%	21.2%
	To serve my country	14.1%	12.2%	13.4%
	Family Tradition	2.5%	3.9%	3%
	Boredom/Escape from home	2.2%	1.8%	2.1%
	For the bonus	2.3%	0.7%	1.8%
	To get in shape	1%	0.9%	1%
	To earn U.S. citizenship/prove I am an American	0.3%	0.7%	0.5%
1	The Recruiter talked me into it	0.2%	0.5%	0.3%

Reason for Joining Affects Motivation to Train



Motivation Level

Soldier Motivation to Train Scale

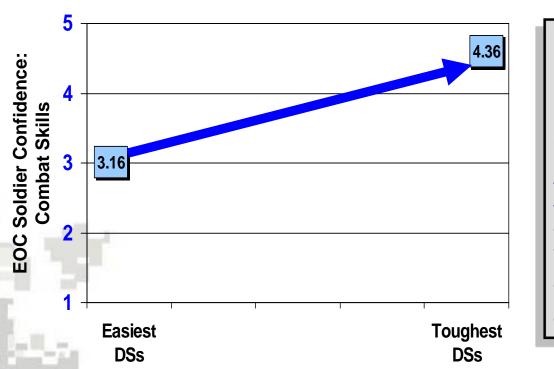
0 = not at allMotivated

7 = extremely Motivated

Measures Soldier's Motivation to:

- complete missions & tasks
- · work as a team with other Soldiers
- continue training

EOC Soldier Confidence: Combat Skills*



EOC Combat-Skill ConfidenceScale

- 1 = not at all Confident
- **5** = extremely Confident

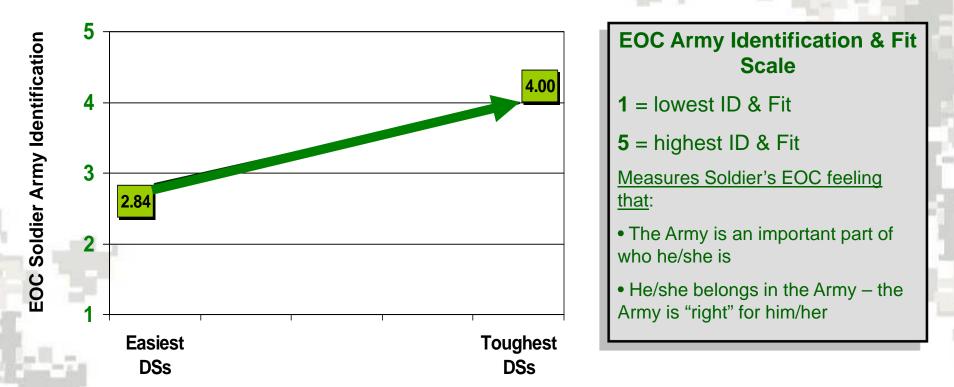
Measures Soldier's EOC Confidence in his/her ability to:

- hit enemy targets & keep weapon functioning in combat environment
- react to enemy fire & convoy attack
- move as member of fire team

At EOC, the Soldiers with the toughest Drill Sergeants were the most confident about their ability to perform in combat.

^{*}Stepwise Regression: EOC Confidence, Combat on Drill Sergeant Toughness & Engagement Scales, controlling for Soldier demographics, incoming attributes and attitudes, and BCT preparedness (solution holds all control variables at their respective means). adjR²=.33; F(9,797)=49.05

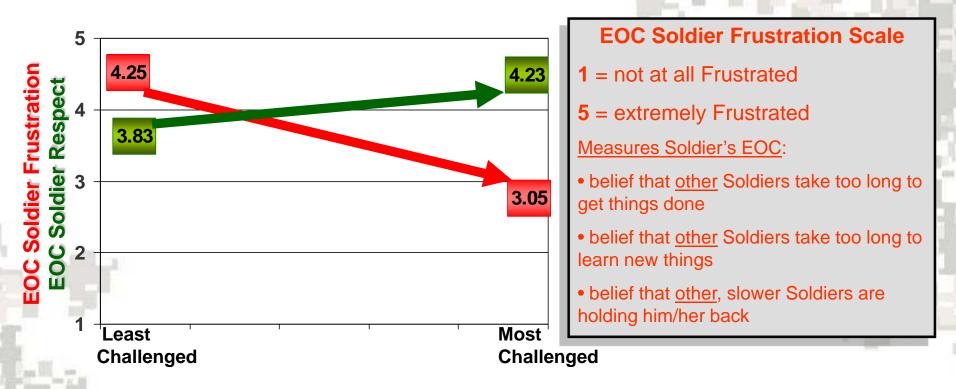
EOC Soldier Army Identification and Fit*



At EOC, the Soldiers with the toughest Drill Sergeants were most likely to believe that the Army is right for them.

^{*}Stepwise Regression: EOC Army ID & Fit on Drill Sergeant Toughness & Engagement Scales, controlling for Soldier demographics, incoming attributes and attitudes, and BCT preparedness (solution holds all control variables at their respective means). adjR²=.41; F(6,799)=93.69

EOC Soldier Frustration with Other Soldiers*



The more challenging BCT is – the more mental and physical effort Soldiers expend – the less Frustrated Soldiers are with their Peers.

The more challenging BCT is, and the less frustrated a Soldier is with his/her peers, the more Respect he/she has for others.

*Stepwise Regression: EOC Frustration & EOC Respect on BCT Challenge Scale, controlling for Soldier demographics, incoming attributes and attitudes, and BCT preparedness (solution holds all control variables at their respective means). Frustration adjR²=.11; F(5,819)=20.35; Respect adjR²=.12; F(5,795)=21.70

How Challenging was BCT?

1 = Not At All Challenging

3 = Neutral

5 = Extremely Challenging

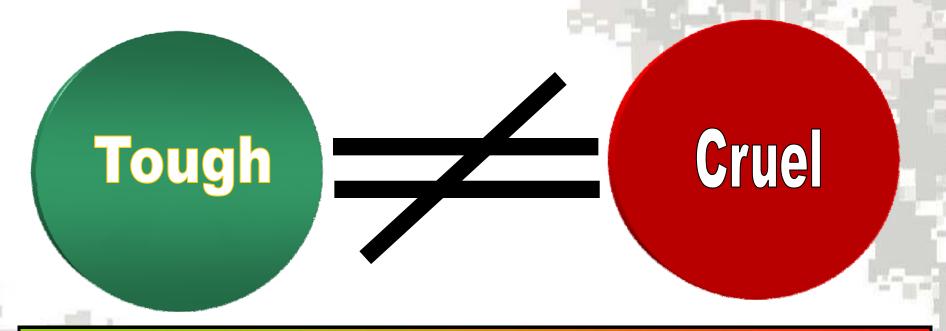
- EOC Mental & Physical Challenge Scale (measures mental & physical effort expended during BCT): 3.56
- EOC Stress Scale (measures sense of being overwhelmed/having to do too much too fast during BCT): 2.56
- Percentage of Soldiers who expected BCT to be more challenging than it actually was: 62% (expected challenge > actual challenge)

Soldiers who found BCT to be more challenging than they expected it to be (actual challenge > expected challenge) showed higher EOC Motivation, Confidence, Commitment, Respect, and Pride & Professionalism levels than did Soldiers who expected BCT to be more challenging than it actually was.*



Soldiers who are challenged beyond their expectations do better.

^{*}Stepwise Regressions controlling for Soldier demographics, incoming attributes and attitudes, and BCT preparedness. Pride&Prof adjR²=.16; F(4,810)=38.45; Respect adjR²=.10; F(6,793)=16.13; Motivation adjR²=.20; F(7,815)=30.74; Confidence adjR²=.29; F(10, 809)=35.07; Commitment adjR²=.37; F(5, 813)=97.49 Directorate of Basic Combat Training/Experimentation & Analysis Element 12



Setting High Standards	Arbitrarily Changing Standards	
Consequences & Punishment	Excessive Physical Punishment	
Criticize + Correct	Harsh Criticism Without Correction	
Praise Only When Earned/	Breaking Them Down but	
No Easy "Go"	Never Building Them Up	
Discipline	Brutality	
It's Not Done Until It's Done Right	Never Demonstrating "Right"	
"No Excuses!"	Ignoring Legitimate Soldier Problems	

Challenge Strategies: More than Just PT

Introduce Leadership, Training, and Mental Challenges as well.

Examples from BCT:

- Have Soldiers prepare & teach a class (e.g., from Smart Book) to PLT/Bay
- Have Soldiers turn-in a weekly Training Summary (e.g., what I learned and how I can use it in combat)
- Have Soldiers turn-in a weekly Army Values essay
- Individual competitions (e.g., fastest weapon assembly/disassembly, best inspection score, most PT improvement, highest PT score) with rewards (e.g., extra phone time, on post pass)
- PLT competitions with rewards (to encourage teamwork)



• Identify "strong" Soldiers and pair them with weaker ones. Hold stronger Soldiers accountable for helping their battle buddies.



Drill Sergeant Style and Soldier Outcomes

On Average, Drill Sergeants with the <u>BEST</u>* Soldiers are rated HIGHEST on Toughness, Discipline, & Professional Engagement, and <u>LOWEST</u> on <u>Personal Warmth</u> and <u>Friendliness</u>.

Toughness & Discipline	Professional Engagement	
Are tough	Seem like they want to be here	
• Are strict	 Seem to know what they're 	
Demand a lot from us	doing	
Set high standards	Care about training us	
Enforce the standards	Are motivated	
• Do NOT try to be "cool"	Push us	
 Do NOT try to be "friendly" 	Challenge us	
Are NOT easy-going	Don't give up on us	

*Here, "BEST" Soldiers are construed as Soldiers with highest EOC Motivation, Combat Confidence, Mental Confidence, Respect, and Army Commitment & Identification averages, and lowest Frustration Averages.

Conclusions

1. New Soldiers thrive in a challenging BCT environment.

- Drill Sergeant "toughness" drives Soldier Motivation, Confidence, Commitment, and Respect, and lowers Soldier Frustration.
- All Soldier "types" benefit from challenge.

2. The "intangible" aspects of Soldierization can be measured.

- Reliable, valid, and efficient scales developed to assess:
 - Drill Sergeant Attributes
 - New Soldier Confidence, Commitment, and Motivation
 - New Soldier Respect, Integrity, Accountability, and Pride & Professionalism

3. Drill Sergeants have the greatest individual impact on New Soldiers.

- Differences in Drill Sergeant style (easy-going/tough) lead to differences in New Soldier outcomes. These differences are visible between Platoons, within Companies.

Additional Information

BCT Soldier Demographics (n~1,330)

	MALES (66.9%)	FEMALES (33.1%)	TOTAL
Age	22.34 (17 - 42)	22.19 (17 - 42)	22.29 (17 - 42)
Education	GED (17.8%), High School (40.3%), Some College (37%), 4yr College Deg. (4.9%)	GED (6.4%), High School (34.6%), Some College (50.9%), 4yr College Deg. (8%)	GED (14%), High School (38.5%), Some College (41.5%), 4yr College Deg. (6%)
Marital Status	Single (76.6%), Married (20.8%), Divorced (2.6%)	Single (77%), Married (18%), Divorced (5%)	Single (76.6%), Married (19.9%), Divorced (3.5%)
Dependent Children	22% have at least one child.	25% have at least one child.	22.8% have at least one child.
Single-Parent Soldiers	7% are single-fathers	13% are single-mothers	9% are single-parents
Before BCT	School Only (7.7%) Work Only (48.3%) School & Work (28.4%) Nothing (15.6%)	School Only (13.9%) Work Only (34.9%) School & Work (38.7%) Nothing (12.5%)	School Only (9.8%) Work Only (43.8%) School & Work (31.8%) Nothing (14.6%)

Pre-BCT Physical Fitness (n~1,330)

	MALES (66.9%)	FEMALES (33.1%)	TOTAL
Made effort to <u>gain</u> <u>weight</u> before BCT	27%	20%	25%
Made effort to <u>lose</u> weight before BCT	44.5%	51%	46.5%
Made effort to <u>eat</u> <u>healthy food</u> before BCT	78%	80%	79%
Made effort to get stronger/build muscle	84%	76%	81%
Made effort to <u>get</u> <u>faster/improve run</u>	75%	75%	75%
Routinely engaged in athletic/physical activities	62.8%	54%	60%

EOC Soldier Confidence (n~1,200)

1 = Not At All Confident 3 = Neutral 5 = Extremely Confident

How confident are you	MALES (66.9%)	FEMALES (33.1%)	TOTAL
in the knowledge, skills & ability of your DSs?	4.89	4.30	4.72
that you can execute basic Battle Drills & Warrior Tasks?	4.39	4.26	4.34
that you can maintain your weapon & correct malfunctions in combat?	4.42	4.11	4.32
that you can properly move as a member of a fire team?	4.29	4.08	4.22
that you can accurately engage enemy targets?	4.33	3.91	4.19
that you can effectively react to enemy fire?	4.23	3.97	4.15
that you can effectively operate in combat?	4.14	3.79	4.03
in your ability to defend yourself in hand-to-hand combat?	4.10	3.87	4.02
that you can care for an injured Soldier until a MEDEVAC arrives?	3.85	4.06	3.91
that you can effectively react to a gas or chemical attack?	3.92	3.75	3.86
in the knowledge, skills & ability of the other Soldiers in your Platoon?	3.57	3.71	3.61



2009 ARC: Market Track Overview

Prepared By: Krista Selph USAAC G2/9 7/27/2009

Market Track: Conference Goals

Research:

- Develop an interactive research calendar that incorporates MRA's planned research (FY10) with parallel efforts of ARC attendees.
- Visibility and collaboration with industry and other services initiatives.

Data:

- Plan for JROTC/Planning4Life/March2Success Data
- Timeline for JROTC/PFL/M2S Plan

Tools:

Assessment of US-NEXUS/Virtual Worlds

Market Track: Agenda Overview

DAY ONE:

Start	End	Briefer	<u>Organization</u>	<u>Subject</u>
10:15	10:30	Krista/Nancy	CAR G2/9	Track Opening
10:30	11:15	Lonnie Williams	USAAC G6	Overview – USAAC G6 Capabilities
11:15	11:45	All	CAR G2/9	Meet & Greet/ Review of MRA Research
11:45	12:45	ALL	CAR G2/9	LUNCH
12:45	13:45	Michael	TRU	Overview 12-16 Year Old Population
13:45	14:45	Dr. Cynthia Ogden	CDC	Q&A on Youth Obesity/Related Studies
14:45	15:00	ALL	CAR G2/9	BREAK
15:00	16:15	Dr. Jill Lindsey	Wright State U.	21st Cent. Tng. for 21st Cent. Learners
16:15	16:45	COL J. Vanderbleek	JROTC	JROTC Program Overview
16:45	17:00	Krista/Nancy	CAR G2/9	Outbrief/Recap of Day

DAY TWO:

		11101			
	Start	End	Briefer	Organization	Subject
	10:00	11:00	COL S.W. Chandler	ARCIC	The Human Dimension (IS)
	11:00	12:00	Dr. S. Acchione-Noel	FCS	Cognitive Research in Battle Command
70	12:00	13:00	LUNCH	CAR G2/9	LUNCH
	13:00	14:00	Krista/Nancy	CAR G2/9	JROTC/March2Success Data Overview
	14:00	15:00	Athylnne/G2/9 G6	JROTC G2/9, G6	JROTC/March2Success Working Group
	15:00	15:15	BREAK	CAR G2/9	BREAK
	15:15	16:00	A. Tyler/G2/9 G6	JROTC G2/9	Working Group -JROTC/March2Success
	16:00	17:00	LTC Greg Pickell	Army National Guard	US-NEXUS Virtual World Demo
	17:00	17:30	Krista/Nancy	CAR G2/9	Input Session – Recap of Day

Conclusion

Way Ahead

- 1. Is there any existing or planned research that indicates when the obesity epidemic will level out or plateau? Additionally, is their insight into how many individuals in the population (overall and youth) will be affected when the plateau is reached?
- 2. Has there been any research into the reduction of recess/gym classes in public schools and the effect it has on the health of the youth population?
- 3. What is the rate or projected rate of Type 1 Diabetes among the youth population over the next 3-5 years? What is the trend for this group over the next 10-20 years if we stay on the same course, and how can the Army help make a difference?
- 4. Aside from the obesity epidemic clearly effecting the youth population, is the CDC noticing secondary medical effects/complications/trends? If so, how are we tracking this? What are some recommendations and thoughts on how to holistically address these issues?
- 5. Is there any research into the differences in gender and youth obesity? We noticed in preliminary research that teenage girls are less likely to be obese than their male counterparts, although the males are slightly more active. However, when adulthood is reached, that tends to reverse itself. Is there research or insights into this?
- 6. What are the most common causes of fatality with the youth population, and at what rate? Is there insight or research into youth fatalities on the job? If so, what industries pose the biggest risk?
- 7. Is there any information that indicates organizations making the biggest impact in addressing youth health/obesity issues? If so, who are they? What are they doing? Are they having an impact?
- 8. What does the CDC have planned in terms of upcoming research to keep a more real-time pulse on the changing health landscape of the U.S. aside from the overarching census dates? Is there a plan to leverage technology to more accurately report changes? If so, what is it and in what format will it be available to the general public or other government entities?
- 9. How can the Army interface with the CDC's efforts to mitigate the growing obesity epidemic? As a researcher and public health official, are there things you would like to see a large organization such as the Army or the Department of Defense do to assist the total population given our focus on health and physical fitness?
- 10. Has there been a significant change in growth rates over the past two decades? For instance, are babies being born bigger and continuing to grow both in height and weight at a faster rate than before? If so, what are supposed reasons? Is there any insight into this?

A Preliminary Research Project on Training for 21st Century Learners

Dr. Jill L. Lindsey, Wright State University

Sponsored by and in cooperation with Capt. Scott Pierce, Lt. Dennis Riechman, AFRL/RHAL Mr. Pat Vincent, Northrop Grumman Corp. Ms. Gina Johnson, AETC/82TRW

- To better understand current technical training challenges related to trainees' attributes and learning preferences
- To examine alignment of teaching and learning modalities in current technical training and identify areas for improvement
- To identify leverage points in training where innovations in technology could improve training outcomes

Project Goals

1. A review of literature
21st century learners' attributes and preferences
Instructional practices for 21st century learners

 Data Gathering Tools.
 21st Century Training Observation Rubric Grasha-Reichmann Learning Styles Inventory (LSI) Grasha-Reichmann Teaching Styles Inventory (TSI)

- 3. Data Collection and Analysis
 Teaching Observations (n=17) in six courses
 Training Learning Styles Inventory responses (n=172)
 Teaching Styles Inventory responses (n=22)
- 4. Findings and Recommendations

Four Phases

A constellation of key attributes

- desire meaningful work
- are self-directed
- prefer social interaction & collaboration
- have a sense of capability and competence
- have strong visual-spatial skills
- tend toward parallel processing/multitasking
- are technologically literate (intuitive)

Literature Review21st Century Learners

- collaboration through teams/cooperative learning
- technology tools
- visual tools
- content-related multi-tasking
- opportunities for choices, decision-making, and selecting appropriate learning strategies
- establishing high expectations
- metacognition
- frequent praise and feedback
- meaningful work

Best Practices draw on these attributes

Data Gathering Tools & Findings

21st Century Technical Training Observation Rubric (TTOR)

21st Century Criteria Preferences

Grasha-Reichmann Learning Styles Inventory (LSI)

Grasha-Reichmann Teaching Styles Inventory (TSI)

Mean Rating* N=17 Criteria Meaningful 2.00 Self-direction .94 Metacognition 1.80 Collaboration 1.53 1.76 Competence 1.47 Parallel processing .11 Technology 2.18 Variety **Traditional** 2.59

Technical Training Observation Rubric (TTOR)

^{* 0=} not observed 1= seldom 2=half of the time 3= most/all of the time

Independent: self-paced, working alone

Dependent: look to the teacher/peers for direction

Competitive: self against peers/recognition

Collaborative: cooperating/small group work

Avoidant uninterested and overwhelmed by attention

Participant: activities and discussion, desire to meet, teacher expectations.

LSI Learning Types

- 1. Classroom activities are interesting.
- 2. Class sessions make me feel like a part of a team where people help each other learn
- 3. When I don't understand something, I try to figure it out for myself
- 4. I feel very confident in my ability to learn on my own
- 5. I would like to play interactive web-based games to learn
- 6. I like classes where I can work at my own pace
- 7. Students should be told exactly what material is to be covered on the exams.

Sample LSI Items

LSI Items Mapped to 21st c. Criteria Preferences

21st c. Criteria	Mean*	N=172
Meaningful	4.03	
Collaboration	3.95	
Metacognition	3.83	
Competence	3.82	
Technology	3.76	
Self-direction	3.65	
Traditional	3.27	

^{*1=} strongly disagree 2=moderately disagree 3= undecided 4= moderately agree 5= strongly agree

Independent

L[1.0-2.7]

M[2.8-3.8]

H[3.9-5.0]

Avoidant

L[1.0-1.8]

M[1.9-3.1]

H[3.2-5.0]

Collaborative

L[1.0-2.7]

M[2.8-3.4]

H[3.5-5.0]

Dependent

L[1.0-2.9]

M[3.0-4.0]

H[4.1-5.0]

Competitive

L[1.0-1.7]

M[1.8-2.8]

H[2.9-5.0]

Participant

L[1.0-3.0]

M[3.1-4.1]

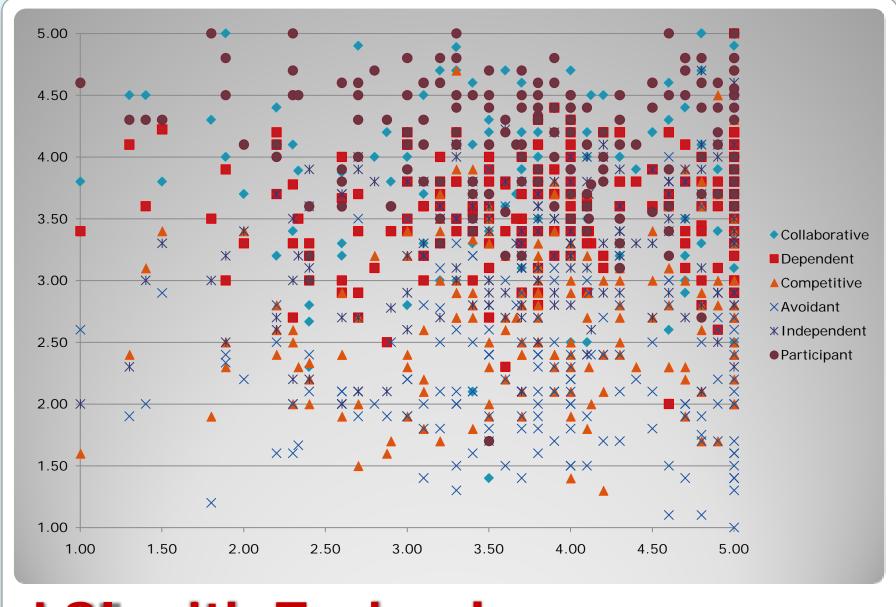
H[4.2-5.0]

LSI Scoring Norms

Learning Style	Mean*	N=172
Participant	4.13 Mh	
Dependent	3.91 M	
Collaborative	3.9 H	
Technology	3.75	
Independent	3.31 M	
Competitive	2.71 M	
Avoidant	2.26 M	

*1= strongly disagree 2= moderately disagree 3= undecided 4= moderately agree 5= strongly agree

Grasha-Reichmann LSI



LSI with Technology

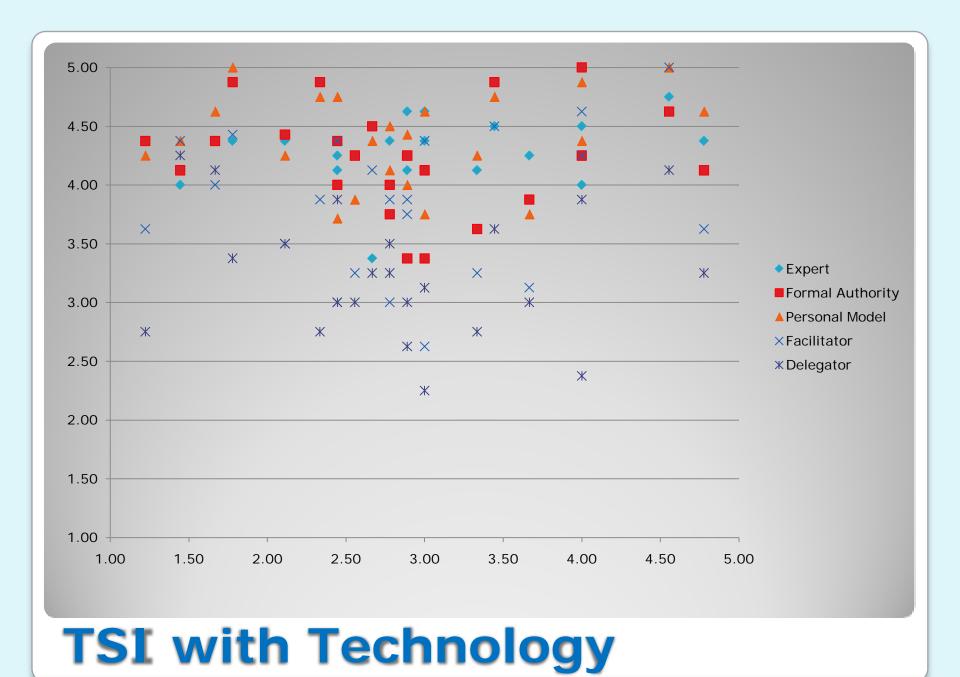
- 1. Sharing my knowledge and expertise with students is very important to me.
- 2. I give students negative feedback when their performance is unsatisfactory.
- 3. Students are encouraged to emulate the example I provide.
- 4. I spend time consulting with students on how to improve their work on individual and/or group projects.
- 5. Activities in this class encourage students to develop their own ideas about content issues.
- 6. I have interacted/would interact with my students using online chat or email

TSI Sample Items

Teaching Style	Mean*	N=22
Personal Model	3.48	
Expert	3.4	
Formal Authority	3.37	
Facilitator	3.04	
Delegator	2.60	
Technology	2.57	

*1= strongly disagree 2= moderately disagree 3= undecided 4= moderately agree 5= strongly agree

Grasha-Reichmann TSI



TSI LSI

- 1 Expert/Formal Authority with personal model/ facilitator/delegator
- 1- dependent/participant/competitive
- 2 Personal Model/Expert/ Formal Authority with facilitator/delegator
- 2- participant/dependent/collaborative

- 3 Facilitator/Personal Model/Expert w/formal authority/delegator
- 3- collaborative/ participant/independent
- 4 Delegator/Facilitator/ Expert w/ formal authority/personal model
- 4- independent/ collaborative/ participant

Grasha Style Clusters

Alignment of Preferences

INSTRUCTORS (N=22)

TRAINEES (N= 172)

Personal Model 3.48

Expert 3.44

Formal Authority 3.37

Facilitator 3.04

Delegator 2.60

Collaborative

Participant

Dependent

Independent

Competitive

Technology

3.9 H

4.1 Mh

3.9 M

3.31 M

2.71 M

3.7

Technology

2.57

- Technical Trainees are 21st Century
 Learners with 21st C. learning preferences
- There is alignment between Instructors' preferred Teaching Style Cluster 2 and Trainees' Learning styles preferences with the exception of greater technology use preferred by students
- Instructors were not observed teaching in their preferred Teaching Styles Cluster 2

Findings

Incorporate Cluster 2 methods into instruction:

role modeling illustration demonstration examples

discussions of alternative approaches sharing thought processes for obtaining answers

sharing personal experiences coaching and guiding with feedback

Recommendation 1

Train Instructors to use 21st century best practices:

- collaboration
- technology tools
- visual tools
- content-related multi-tasking
- meaningful work
- metacognition
- choices
- decision-making
- selecting appropriate learning strategies
- high expectations
- frequent praise and feedback

Recommendation 2

- What role does curriculum design play in shaping/constraining instruction?
- What would class lessons look like if 21st century criteria were used to guide curriculum design?
- What impacts would the use of technology tools for learning have on trainee engagement and performance?
- How might Instructor Training better support 21st century instruction/Cluster 2 teaching methods?
- What would instructor training look like if the 21st Century Observation Rubric Criteria were used for self-reflection and providing feedback about instruction?

Questions Raised

MORE RESEARCH IS NEEDED

focused on curriculum design, instructional methods, and Instructor Training

The Way Forward

QUESTIONS

Email contact information: JILL.LINDSEY@WRIGHT.EDU





Army JROTC



Col John Vanderbleek, Director Mr. Leon McMullen, Dep Dir Ph: 757 - 788 - 4309 / 4656

Agenda

"Motivating young people to be better citizens"

- Current Status JROTC
- Program Expansion Criteria / Analysis
- Challenges: How can we find the right school/district?...identify successes/failures?
- Conclusion

Build upon Success: JROTC/ NDCC

Goals

- Support Expected School wide Learning Results (ESLR's)
- Promote citizenship
- Develop leadership
- Teach to Communicate effectively
- Improve physical fitness and promote healthy lifestyle
- Provide incentive to live drug-free
- Strengthen positive self-motivation
- Provide historical perspective of military service
- Train to work as a team member
- Inspire to graduate from High School, attend institutions of higher learning, and pursue meaningful careers particularly in the areas of science, technology, engineering, and mathematics

Instructor Qualifications

JROTC Instructor certification is now equal to that awarded by States under NCLB and meets the requirements of NDAA for teaching JROTC and embedded subjects areas such as physical education, health/wellness, and civics.

Standards for JROTC instructor certification (< 5yrs)

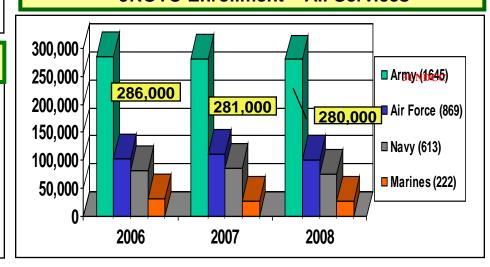
- Bachelor's degree for Senior Military Instructor
- Associate's degree for Assistant Military Instructor

Measures of Effectiveness SY 07-08			
	School	JROTC	
Attendance	90%	93%	
Graduation	86%	98%	
Indiscipline	16.4%	5%	
Drop Out (Seniors)	3%	<1%	
GPA	2.7	2.9	

USACC awarded 4166 ROTC scholarships:

1138 / 27.3% - All JROTC services 801 / 19.2% - Army JROTC Cadets

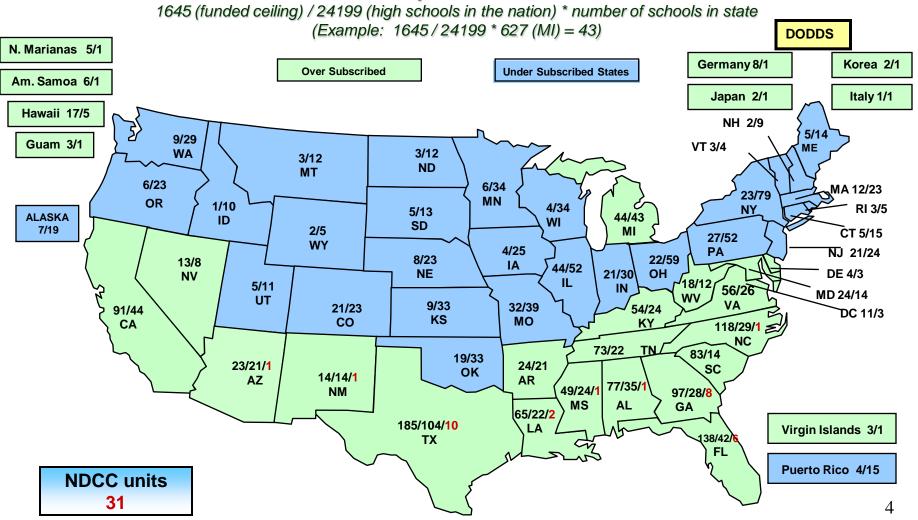
JROTC Enrollment - All Services



JROTC Units - Current Status

"Motivating young people to be better citizens"

Fair & Equitable Formula



Program Expansion Criteria

"Motivating young people to be better citizens"

Expansion

- POM validated opening 265 new units
 - FY10 43 units; FY11 43 units; FY12 ??
- 220 schools on the Order of Merit List (OML)
- 69 schools on the OML are in undersubscribed states.

Expansion Analysis

- Target schools to improve:
 - Attendance
 - Graduation Rates
 - Discipline
 - GPAs
 - Drop out rates

Expansion Criteria

- Fair and Equitable Distribution (25 points)
- School Financial Solvency (20 points)
- School Facilities (20 points)
- Cost Effectiveness (student interest) (15 points)
- Time on Waiting List (10 points)
- Willingness to offer credit other than elective (10 points)
- Command interest (determined by CG, USACC)
- Total 100 points

Proposed Expansion Criteria

- Fair and Equitable Distribution (15 points)
- School Financial Solvency (20 points)
- School Facilities (20 points)
- Cost Effectiveness (student interest) (20 points)
- Willingness to offer credit for JROTC (15 points)
- Title I or Title I Eligible (10 points)
- Command interest (determined by CG, USACC)
- Total 100 points

New Expansion Criteria Defined-July 2009

"Motivating young people to be better citizens"

1. Title I or Title I Eligible:

(20 points)

Schools where at least 40% of the children in the school attendance area are from low-income families or at least 40% of the student enrollment are from low-income families are eligible to receive federal Title I funds.

2. Indicators of Need:

(20 points)

- Local Unemployment Rate (4 points)
- High Illiteracy Rate Among Adult Population (4 points)
- Graduation Rate (4 points)
- RAMP Reading and Mathematics Proficiency (NCLB) (4 points)
- Post Secondary Education/Opportunities (4 points)

3. Student Enrollment:

(15 points)

- BDES will ensure schools have adequate student population and interest in participation
- Enrollment of 100 or above (15 points); Enrollment of 75 to 99 (10 points); below 75 (5 Points)

4. Willingness to offer credit other than elective for JROTC:

(15 points)

Health (15 points); Physical Fitness (10 points), Elective (5 Points)

5. School Financial Solvency:

(10 points)

BDES will ensure schools are financially capable of supporting a unit in out-years

6. School Facilities:

(10 points)

Exceed Minimum requirement (10 points); Minimum requirement (5 points)

7. Fair & Equitable Distribution:

(10 points)

- IAW SA guidance, provide additional points for schools from under-represented states in order to comply with 10 USC 2031(a)(1)
 - Undersubscribed (10 points); Oversubscribed (5 points)
- 8. Command Interest (determined by CG, USACC)
 - Rapid processing of school's application and placement on OML according to CG guidance

NASBE "JROTC PLUS" Program Concept

"Motivating young people to be better citizens"

- JROTC PLUS envisions a partnership between JROTC high schools and their feeder middle schools in selected communities with high dropout rates
- Provides academic support for drop out risks starting in middle school and extending through HS JROTC program
- Middle school component could be a candidate for ARRA "Invest in What Works" funding consideration -- with NASBE acting as the integrator for a consortium of selected state and local education agency teams
- Consortium members would agree on policies and programs to enable early intervention, rapid remediation and middle and high school alignment
- NASBE would provide ongoing technical assistance to states and districts on policy initiatives and best practices, as well as collect data and provide program analysis and metrics
- Could be aligned with other initiatives such as Service Nation and CSA's Work Force development initiative
- JROTC PLUS students could participate in Army sponsored, no-cost tools to help school systems
 - March2Success (testing and remediation)
 - S-ASVAB and career counseling
 - Planning for life
 - President's Physical Fitness Challenge

Challenges

"Motivating young people to be better citizens"

- Possible future budget cuts impacting Army JROTC
- Local/state educational budget cuts
- Marketing in undersubscribed states
- Identifying schools where JROTC can "make a difference"
- Tracking progress/failure

Conclusion

"Motivating young people to be better citizens"

- JROTC is on target for the initial expansion goal of 43 new units in SY 2010-2011.
- Revised Expansion Criteria in place to influence school selection for new units in SY 11-12, 12-13
- JROTC PLUS program concept under development
- Data collection essential to make program adjustments and target the right locations in urban / rural school districts







United States Military Entrance Processing Command

VIPS 101 Briefing





Purpose and Outline

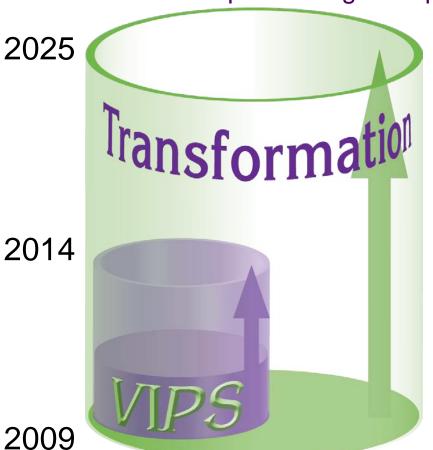
- <u>Purpose</u>: Establish an awareness among USMEPCOM Accession Partners in reference to VIPS transformation
- Outline:
 - Transformation Overview
 - Current Processes
 - Customers
 - Goals and Impacts
 - Concept of Operations
 - Accession Enterprise
 - VIPS Initiatives
 - What VIPS means for Recruiting Personnel
 - Summary





USMEPCOM Transformation

Strategic Vision: "USMEPCOM is recognized as a customercentered, future-focused learning organization driven by best business practices and cutting-edge technologies, providing realtime entrance processing and qualification."



VIPS is the near-term "800 lb. gorilla" that supports transformation, but it does not get us all the way to our strategic vision.





VIPS Business Relationships

Mission Support A USD (MPP) OSD (P&R)	J-1 J-4 J-6	Mission Execution A Western Sector J-3	Activities Guidan Counse	ce	
Services		Applicants MEPS Staff		Recruits	
BTA Other COI	J-8 OSP&T Special Staff		Recruite	ers	

VIPS Main Relationship Types

- External Support Relationships
- Internal Support Relationships
- Operational/MEPS Relationships

USD (MPP): Under Secretary of

Defense (Military Personnel Policy)

OSD (P&R): Office of Secretary of

Defense (Personnel and Readiness)

BTA: Business Transformation Agency

COI: Community of Interest





Current Processes

Time Intensive for Applicants

Sequential



Labor Intensive for Recruiting/MEPS Personnel

Considerable down time



Improving the process for applicants will also improve the process for Recruiting/ MEPS personnel and vice versa







Our Customers











For kids who have grown up accustomed to speed, accessibility and anonymity of the Internet, interfacing with an actual human being will seem cumbersome, while being asked to sit and wait for batch processing of others will seem intolerable.





Key Goals

- One visit, one accession
- Paperless processing
- Positive identification of applicants
- Enhanced data accessibility
- Validation of self-disclosed information
- Compliance with DoD IT mandates
 - Net-centric
 - Enterprise architecture





Impacts

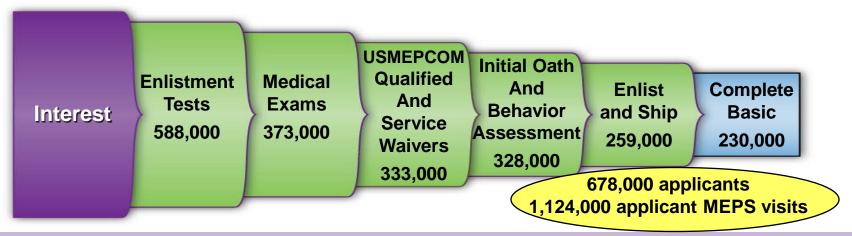
- Reduce accession processing costs
- Reduce attrition
- Improve data quality
- Initiate electronic medical record
- Enable anytime, anywhere processing
- Enable business process flexibility, adaptability, scalability
- Enhance data exchange across DOD



Current

CONCEPT OF OPERATIONS

Fiscal Year 2008 Processing Data





Future

CONCEPT OF OPERATIONS

Projected Workload

Global Accessions Processing

Applicant Processing Tools Available On-Line

- I-CAT Enlistment Test
- Interest
- Medical Pre-screen
- Behavior Assessment
- Waiver Prescreen

- Testing
- **Tailored Medical** Exam
- **Biometric** Verification
- **Initial Oath**
- And Behavior
- Assessment 240,000 250,000

Enlist and Ship

235,000

Complete **Basic** 230,000

250,000 applicants 250,000 applicant MEPS visits

Increased capacity - reduced workload



External Process



MEPS Process





Accession Enterprise









Processing

USMEPCOM

VIPS

IT Solution

Insurance **Companies**



Selective Service System



SSA



OPM / **FBI**



Veterans Affairs













Armed Forces Health Longitudinal **Technology Application**





Biometrics Management Office



Reception/ **Training** Centers













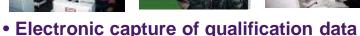




10



Defense Manpower Data Center



- Support for DOD human resource systems
- Paperless, Net-centric environment
 - Secure availability of accession data
 - >90% applicant pre-qualification
 - System scalability

Business Solution

VIPS 101 Briefing





11

Positive Identification

Today

- ID verified via driver's license
 or other ID card
- e-Security developed for identification and tracking within the MEPS
- Prior processing history with
 other Services available only
 in USMIRS

VIPS

- Biometric capture at first contact
- Identity positively verified at each step of the accessions process
- Positive identification of applicant and biometrically sign documents
- Immediate notification if Applicant has processed for any other Service
 - Current status
 - Disqualifying conditions





Aptitude

Today

- ASVAB at MEPS
 - Computer-based test
 - Verified score delivered immediately
- ASVAB delivered at MET site
 - Paper and pencil test
 - Scores not immediately verified

VIPS

- I-CAT for testing
 - Web-based version for MEPS and MET use
 - Monitored testing
 - Verified score delivered immediately
 - Test scheduled in advance
 - Allows access from distance learning centers





13

Conduct

Today

- Batch verification of:
 - Social SecurityNumber
 - Alien RegistrationNumber
 - Prior Military Service
- More than 30-day turnaround for Special Agency Checks (ENTNAC)

VIPS

- Real-time verification of personal data
- Additional checks with:
 - State DMV records
 - Bureau of Vital Statistics (birth, death, marriage)
 - Department of Homeland Security
 - Credit Bureau
- Immediate notification to Service of conduct-related issues

Medical Processing - History

Today

- Medical records almost entirely in paper files
- Medical history relies completely on selfdisclosed information
 - Some conditions are not adequately reported
 - Treatment records

 provided by Applicant,
 often requiring
 additional trips by the

 Recruiter

VIPS

- Electronic medical records
 - Data-sharing via Web services
 - Interface with AHLTA
- Collection and verification of medical history
 - Online tool to collect selfreported medical history
 - Verify data via checks with insurance companies, health care providers, pharmacies
 - Electronic storage of all relevant medical data

Medical Processing - Exam Today VIPS

- Physicals at MEPS only
 - Transportation and lodging costs
 - Wait time
- Manual data entry
 - Costly, timeconsuming, and prone to error

- Medical exam options
 - Local exam by qualified health care provider
 - Qualification decision from government employee
 - MEPS still an option
- Interface from medical equipment to system
 - Reduced data entry errors
 - Time savings
 - Complete medical record

15

Medical Processing - Profiling

Today

- Prescreen review occurs the night before MEPS visit
 - Little time for information gathering
 - Information may lack sufficient detail
- Medical profiling
 - Done by MEPS CMO
 - Little ability to balance workload

VIPS

- Reviewed upon Service request
 - Validation of self-reported medical history
 - Issues identified earlier
 - Fewer "wasted" trips by recruiters
- Centralized profiling
 - Done by any available, qualified profiler
 - Balanced workload
 - Faster, more consistent qualification decisions

Medical Processing - Other Today VIPS

- Medical waivers
 - Service provides medical records
 - Waivers passed back through Service
- HIV and drug sample collection at MEPS only
 - Results available within 48 hours
 - Trip to MEPS required for testing

- Medical waivers
 - MEPCOM provides medical data via interface at Service request
 - Waivers passed back electronically
- HIV and drug sample collection at remote locations or MEPS
 - Point-of-collection testing for instant results
 - Trip to MEPS not required





What Does VIPS Mean for Recruiting Personnel?

- Fewer trips to MEPS
 - Medical and conduct pre-screens eliminate trips for applicants we know up front will not meet qualification standards.
 - Pre-screens enable waiver consideration to occur before the MEPS visit.
 - ASVAB and medical exam can occur outside MEPS facilities in location closer to (or in) hometown.
- Elimination of paper
 - All required forms and paperwork completed digitally via a web portal (includes medical pre-screen form and eventually medical history form).
- Efficiency
 - Applicants scheduled throughout the day for specific MEPS activities instead of batch processed.



Accessions Research Consortium

2 September 2009



Agenda

- AEC Overview (brief)
- AEC Marketing Tools
- Social Media
- IT (Salesforce)



A review of recruiting processes revealed an industrial production model

- Process driven, rather than results driven
- Labor intensive production process
- Individual incentive structure minimizes teamwork
- Short performance periods and high pressure minimize long term planning and investment
- No incentive to document value of recruiting enablers (marketing)
- Information Technology designed to automate legacy processes, not to support enterprise decision making



True enterprise transformation requires a holistic approach to all facets of the business model

Information Management

Incentives & Rewards

Culture

Organizational Design

Policies & Procedures

Talent Selection & Management

EXPERIENCES

Overarching strategy of the AEC

- Marketing strategy
 - Address prevailing misperceptions about the Army through direct engagement
 - Drive serious consideration (appointments) rather than leads
 - Create low-threat opportunities for recruiters to engage with prospects
- Recruiting Strategy
 - Educate and inform prospects about the Army
 - Focus on engaging personal interactions, not volume prospecting
 - Empower recruiters with state of the art information technology
 - Reduce administrative burden
 - Substitute Capital for Labor
- Experiment, measure, disseminate



Results

- Market share
- Recruiter productivity
- Mil/Civ work force
- Single Mega-Location
- AEC vs. Army Recruiting
- Compelling Marketing tools

AEC Marketing Tools

- Career Navigator
 - Explore Army Careers
 - View Soldier profiles with "Hotspots"
 - Army Compensation
 - Army Bases
 - Army Education (forthcoming)
 - Army Benefits (forthcoming)
- Mobile Kiosk
- Local Website with integrated Social Networking
- Deployable "Strike Package" for events

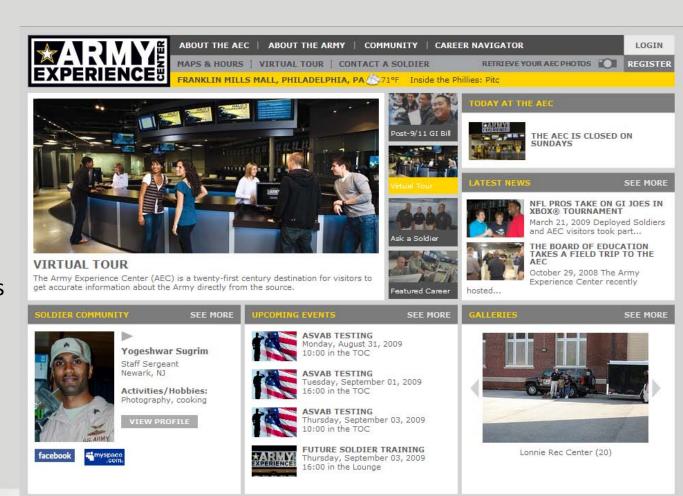
Career Navigator



EXPERIENCE!

AEC Website

- Soldier profiles with Social Networking links
- Future Soldier "Hometown Hero" profiles
- Upcoming events and activities
- Photos from past events (linked to Flickr page)
- Career Navigator





Strike Package









EXPERIENCE!

Social Media

- Types of pages
 - Individual
 - Organizational
- Recommended Rules of Engagement
- Uses of Social Media
 - Reaching new prospects
 - Maintaining contact with Future Soldiers
 - Soliciting customer feedback/input
 - Maintaining contact with new Soldiers
- Lessons Learned
- Next steps
 - Facebook Game Application (Mafia Wars)

STATS & TRENDS

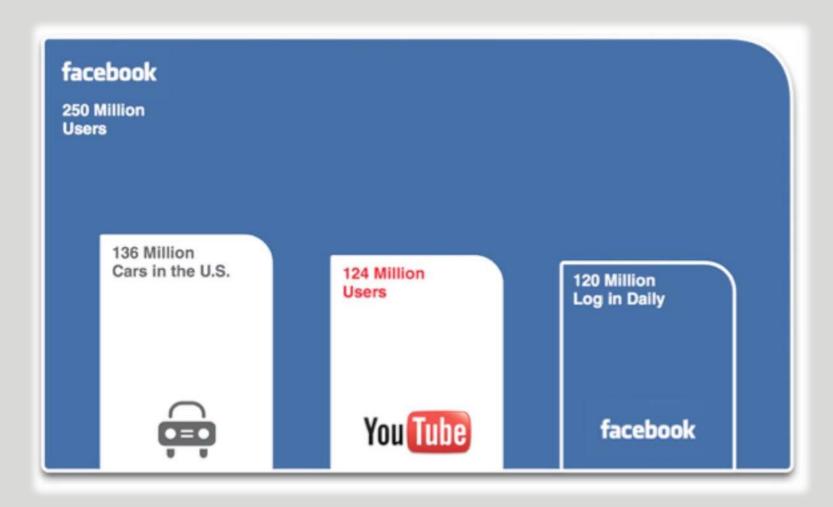
FACEBOOK STATISTICS

- 250MM active users worldwide
- 120MM users log on at least once a day
- Approx. 145MM monthly active users (MAU) for ALL social games on Facebook
- 35MM MAU for immersive role-playing games (RPGs)

FACEBOOK TRENDS

Fastest growing Facebook demographic: 35+

STATS & TRENDS





Social Media: Rules of Engagement

- Chain of command has visibility of any sites used to contact prospects
- Be yourself, but remember that you represent the US Army
- Personal vs. Professional Personas
- Monitor and moderate any sites you create
- Generate dialogue vs. Post stories

Uses: Reach new Prospects

- Targeted ads
- Friends of friends
- Monitor Army, AEC, and other facebook pages



SGT Star". It's in the lower right hand corner of the page: www.goarmy.com

July 17 at 2:19pm · Delete · Report

Write a comment...



Joining the US Army

Between Kevin Musva Musvoka and You



Larry Dillard

June 30 at 1:05pm

I saw your post on the Army Experience Center's page. The commitment to join the US Army is a serious one. If you are a US citizen or legal immigrant your best bet is to contact a recruiter. They can talk you through all the requirements, but you have to be medically, morally, and mentally qualified. That means no major health problems, no major law violations, and a high school diploma. If you have specific questions let me know and I can put you in touch with someone to work with you.



Kevin Musya Musyoka

June 30 at 1:49pm

I have recieved your email regarding service in the U.S Army. I am an international student and I am hoolding a nonimmigrant student visa. I had talked to my dad about it and he told me to wait for three years.

Some told me that applying for U.S citizenship is a long and costly process unless one wants to marry an American citizen. Working with the military has been my ambition. I am not in a hurry in joining the U.S. Army, I just want to get my Associate's degree first then I will consider doing the necessary.



Larry Dillard June 30 at 4:37pm

Kevin -- the Army has a program for legal, non-immigrant aliens with certain language skills that allows them to enlist and receive expedited citizenship. This is a trial program that is currently only available through December 2009 and currently only in New York City and Los Angeles. You can find a full description of the requirements here: http://www.defenselink.mil/news/mavni-fact-sheet.pdf

If you're interested in learning more I will put you in touch with the right people.



Kevin Musya Musyoka

June 30 at 6:06pm

Thank you Larry for your help. I found 2 pages of pdf. in the recommended website and I have printed them. I will see what the requirements are them I will tell you my decision.

ARMY RECRUITING MEETING

Between You and Dennis Gibbons



Dennis Gibbons

July 12 at 2:21am

I want to maybe come in and talk to you about the Army on Saturday. Are you going to be there? Let me know. I am interested in Airborne and later going into being a Ranger Green Beret. I want to be a sniper. I would rather talk with an Officer, than one of the other guys. If you won't be there, then can you set me up with the next ranking officer there?



Jared Auchey July 12 at 12:20pm

Dennis,

I will be coming home from the shore that day and will be available that following week. I can meet you at the AEC or even in NJ whatever is easier for you.

How was Bruno?

Did you watch UFC last night?

I am enjoying this beautiful beach weather.

My number is 215-206-3136 or you can just hit me up on here so we can set a time up to meet.

Jared CPT Auchey

Sent via Facebook Mobile



Dennis Gibbons

July 16 at 11:17pm

well next week i will probably be working every day until the weekend where i will be in wildwood, saturday is my only open day, can you maybe make a call over there and let em know i'm coming?



Jared Auchey

July 17 at 12:38am

Just let me know when you will be arriving so I can coordinate one of my senior people to speak with you.



Uses: Future Soldier Maintenance



Samantha Bailey June 25 at 12:25pm

hey...just want u to know i got home safe...

Angel Espada June 25 at 1:34pm

Glad you made it safe. Enjoy ur time and have fun. Please keep in touch weekly. Take care.

Sent via Facebook Mobile



Samantha Bailey June 30 at 11:14am

hi...its me again...just want you to know that i'm doing ok...hope you are too...



Angel Espada June 30 at 11:26am

Hey private, thank you for checking in. Glad you are doing good. Be safe and keep in touch.

Sent via Facebook Mobile



Samantha Bailey June 30 at 11:33am

i will...



Samantha Bailey July 10 at 1:51pm

hey...its me again checking in...everything is ok...i'm doing ok, its wonderful to see everyone here...how are you doing?



Angel Espada July 10 at 9:25pm

Glad you are having fun. Keep in touch and take care. By the way I hope you are doing some PT there.



Samantha Bailey bi i am doing a little pt and i'm doing ok so far.

Uses: Solicit Customer Feedback/Input

- T-shirt design
- Polls
- Army stories



Army Experience Center The votes and comments in the first AEC T-shirt Design Contest have been counted and the winner, by a substantial margin, is Apache! A big shout out to all of you for participating and congratulations to our five winners: Valerie Beshear-Clark, Joanne Engbrecht, Tiffany Freeze, Debra Michael Calvert, and Katy Brauckmann. You will be receiving your Apache T-shirt shortly. Keep an eye out for our next contest.





🖒 Al Flood, Jessica DiCarlo Smith and 18 others like this.

View all 9 comments

Andrea Lynn Ducharme yes, ew! if i was an apache pilot it would be cool...same w/ the humvee....oh well....
July 29 at 5:39pm · Report

Ann Marie Weber Definitely would love to order this one!
July 31 at 9:27am · Report

Write a comment...



Drill Sergeant Stories



Army Experience Center AEC Fans, we'd like to hear your Drill Sergeant stories. Often depicted as sinister caricatures in Hollywood movies, the real Soldiers who perform this job teach valuable life lessons. What was the greatest lesson you took away from BCT? What task did you achieve that you didn't think possible? How did this shape the type of Soldier - and person - you have become?



Tue at 2:42pm : Comment : Like



Steven C Kopplin I learned alot from BCT and my time in the Army just helped me mature more as a person. I still talk to my BCT Drill Sergeant *Army ROTC*

Tue at 2:48pm · Report



James Jackson I went throught BCT in 1973. The Drill Sergeant was fair, but tough. Though, can not remember his name, I remember him. I learned that with hard work, discipline and a good instructor that I could accomplish far beyond I ever imagined. There were time that I didn't think I could make it. but my DS was there to encourage, push and give a helping. hand when needed.

Tue at 3:25pm · Report



Paul J Frabizzio you guys are really inspiring, i have just begun enlist procedures and are going to meps thurs and friday.. i hope basic comes quick.. i cant wait to finally start up my army career and serve my country.. thanks for all of your stories and words or wisdom and encouragment...

Tue at 4:00pm · Report



Megan Miller good luck at meps, just went through it myself. it can be a headache, but its worth it when you get to swear



Maria Ruhnow-North even though my BCT was back in 1999 I learned how to over come every obstacle the DS threw at me! DS Arroyo and DS Wert were the best and pushed me harder, i guess they saw something in me that i didn't. Now I am and E-6 getting ready to go to ANOC. The Obstacle course was the hardest since i am shorter than most. Though they knew before I did ... Read More v

Tue at 3:04pm · Report



Isaac Vasquez My Drill Sergents laid the foundation for me to become the Soldier that I'am today, the greatest lesson I took from basic is how to manage stress.

Tue at 2:49pm · Report



Cristina Mungilla Its porbably the simplest story, but for me, it was pivotal. It was the first week of BCT and I'm wanting to show my DS how forward-thinking I am. So I ask what the schedule was for the rest of the week and DS explained that I needed to worry about surviving the day. As all Soldiers experience the initial hardships of training, I learned really quickly the wisdom in her words! But even otside of training, people have a tendency to worry so much about past or future concerns, they tend to lose focus on what they can do RIGHT NOW.



Tommy Bell I went through in 1987, I learned team work, and discipline which I needed so badly in my life. I honestly believe it kept me out of prison or worse. I finally found somewhere I fit in. Drill Sqt Douglas & Johnson, I owe a lot to. It was a privilege to serve my country. I am very proud to have done so for 21 years. I still miss it. Thanks to all that have served and are still serving. Essayons!

Tue at 3:54pm · Report



Karina Rivera I dont have these scary DS stories but I do know its a hard job to do and to put in all those hours. I happen to be lucky and have some great ones who really cared about soilders. I know that isnt always the case but sadly it happens regardless if your a drill or not. Only thing I can say is.... I was always yelled at about my hair. Had this great ... Read More v

Tue at 4:56pm · Report



Dennis Kregel BCT was May 1985 for me but reading these comments brings it flooding back like it was yesterday. I travelled the world, met my wife in Germany, married her in Denmark and we just celebrated our 23rd wedding annivesary. I remember the moment I met Drill Sqt Jefferson. I nervously sat packed into the back of a "cattle car" when I first heard the ... Read More ~

Tue at 4:59pm · Report

Uses: Maintain Contact with New Soldiers



Spencer Elmore Hey, Everyone!! Its Pv2 Elmore, id really like to say that the AEC was a vital reason why i joined the army and i have no regrets on the decision. The army so far has been a blast. Basic Training was actually very fun and filled with a lot of great experiences. I am now at Ft. Huachuca for Ait and so far its going great. Will update when more (unclassified) experiences come up.

June 12 at 5:16pm / Comment / Unlike / Report

You, Matt Garthoff, Kelly J Shavrnoch-Jennings and Brenda Grundy Davis like this.



View all 9 comments.



Brent Lee Congrat PV2 Elmore, Are you going to make it a Career? SGT Lee

June 18 at 1:56pm · Report



Matt Garthoff Very good to hear. Thanks for sharing, I'd like to hear more every so often.

June 20 at 12:10am · Report

Social Media: Lessons Learned

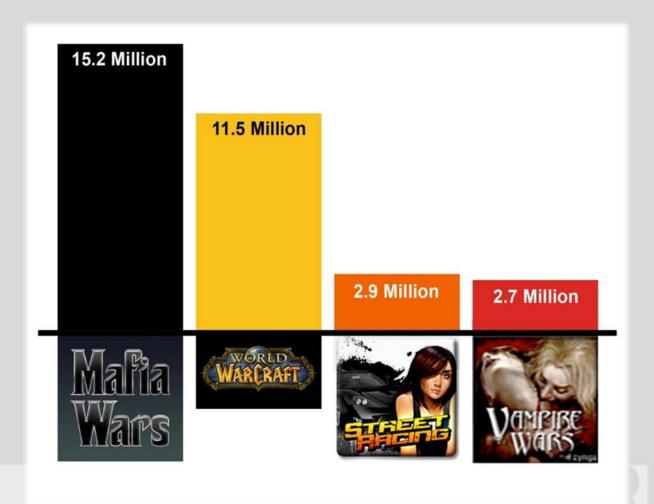
- Requires active monitoring and deliberate engagement
- Don't respond to "haters"
- Social media is not a particular site; it's an ecosystem of activities across multiple sites

Social Media: Next Steps

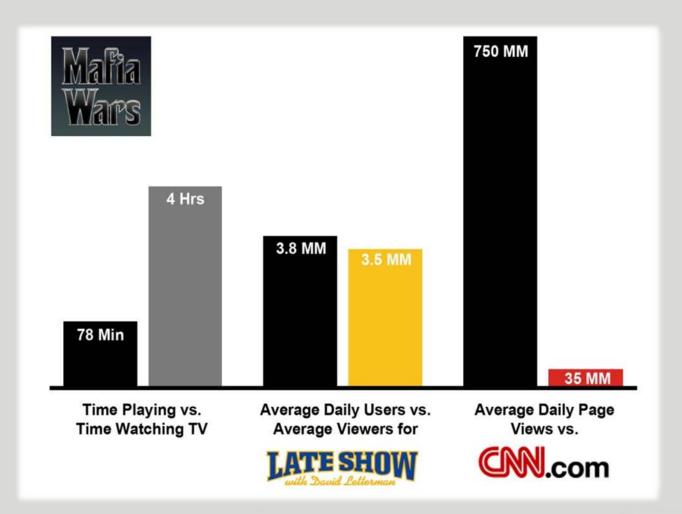
- Game in development
- Crossover content
- "My Army Story" YouTube Upload

STATS & TRENDS

SOCIAL GAME STATS



STATS & TRENDS



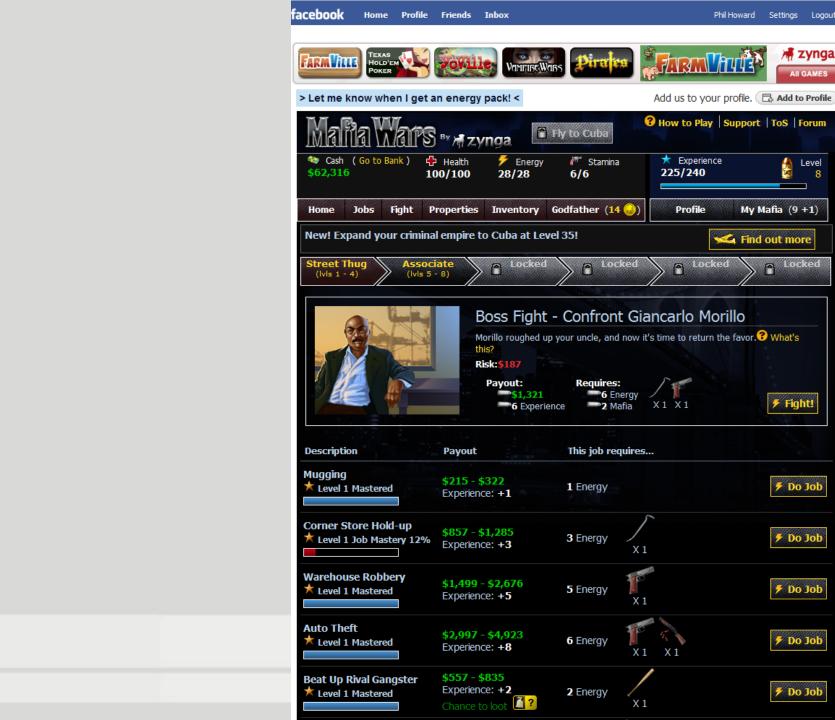
PLAYER DEMO

• 61% are 18-34



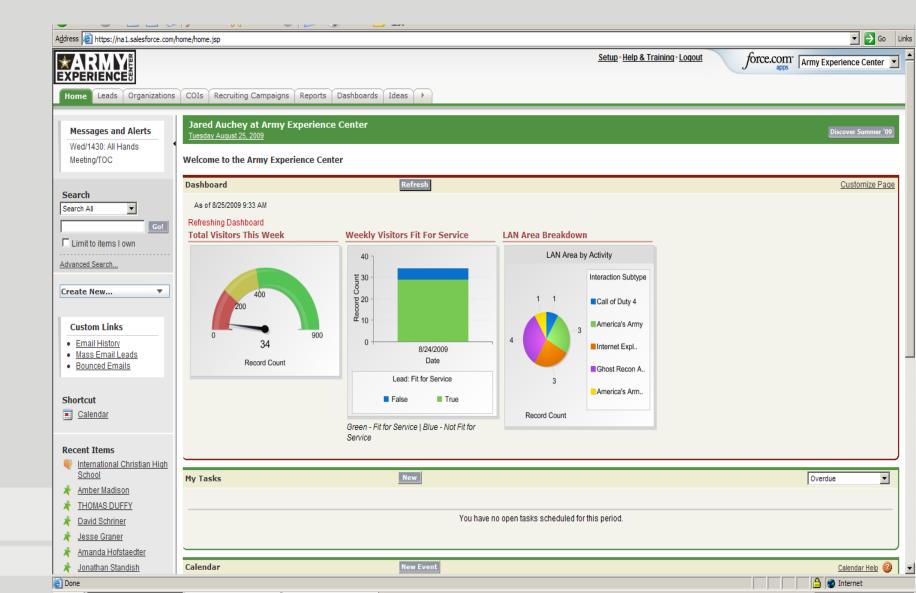
ACTIONS PER DAY

- 97MM "jobs" completed
- 4MM items shared

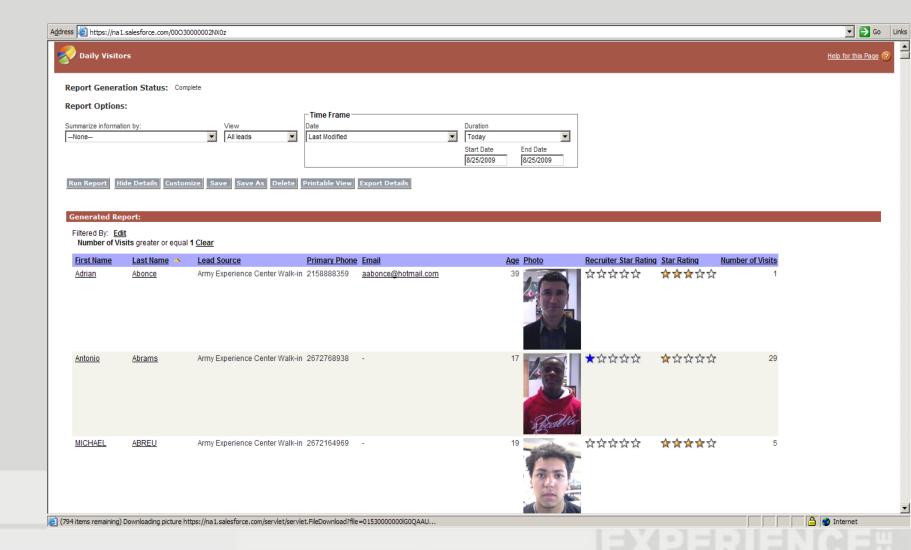


INFORMATION TECHNOLOGY SALESFORCE.COM

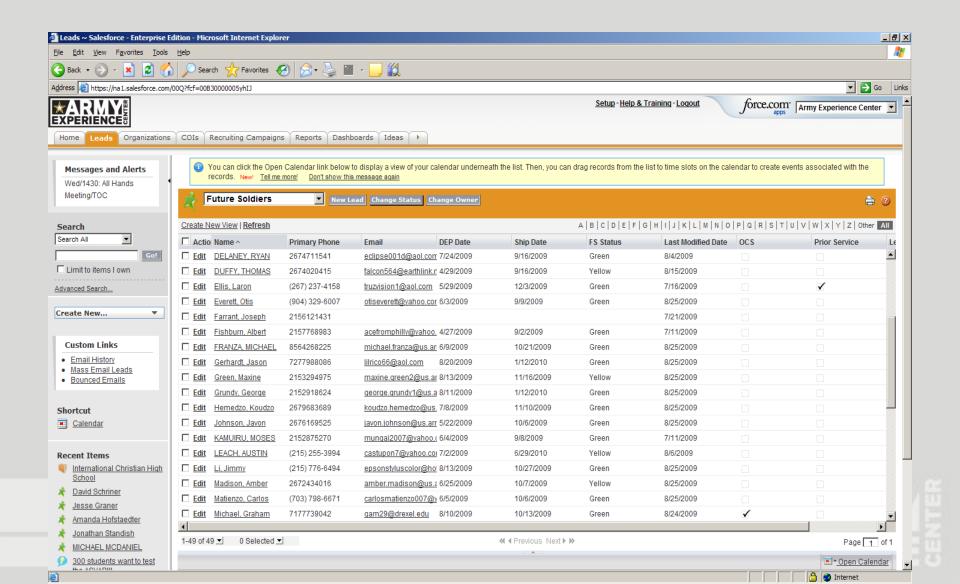
Home page with Dashboards



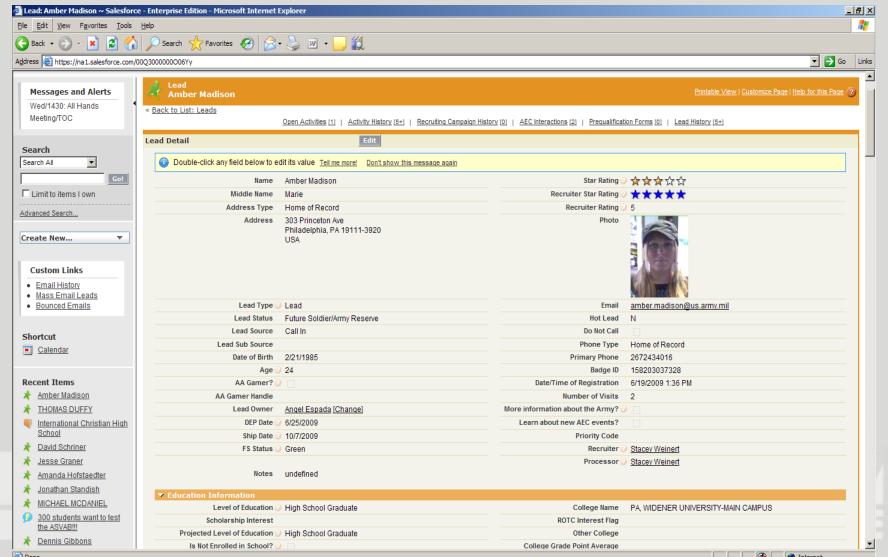
Report of Daily Visitors



Lead Records

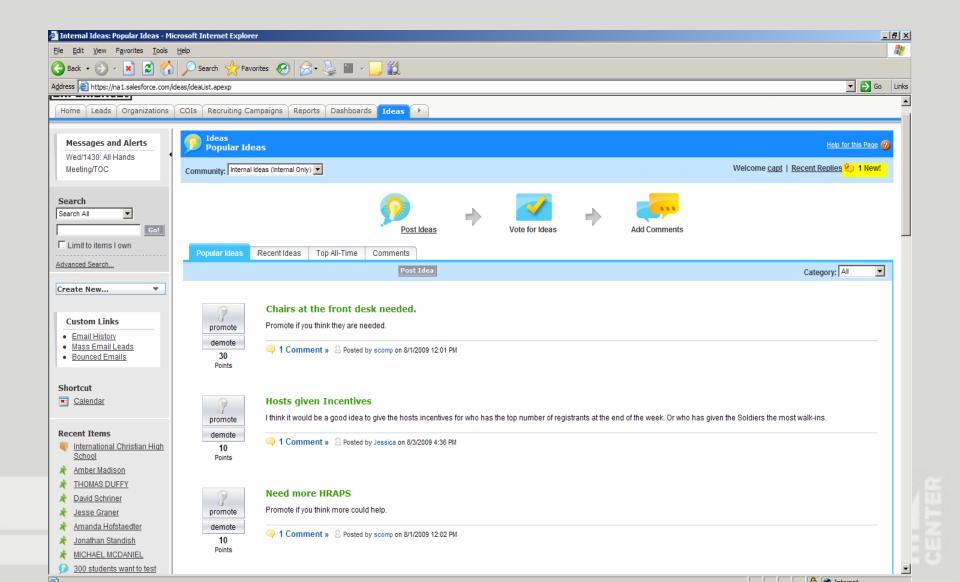


Individual Lead Record

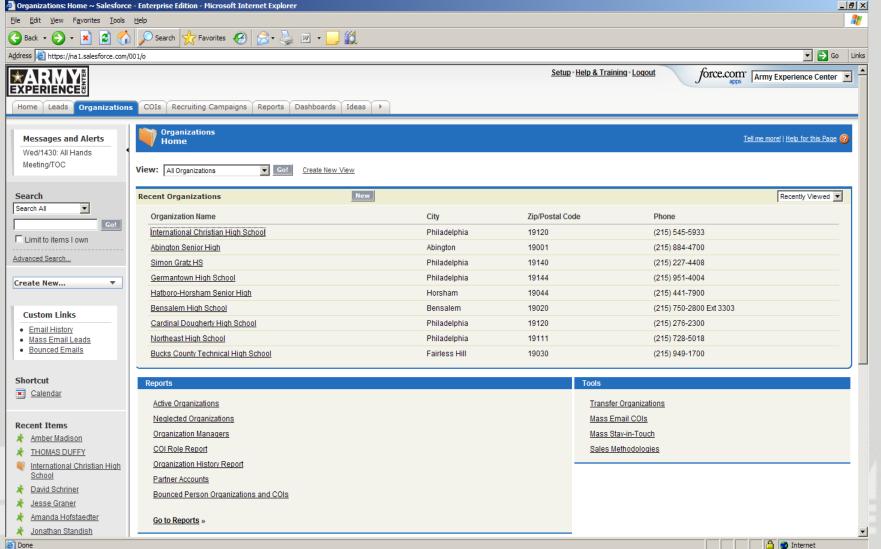


ZENTER.

Ideas

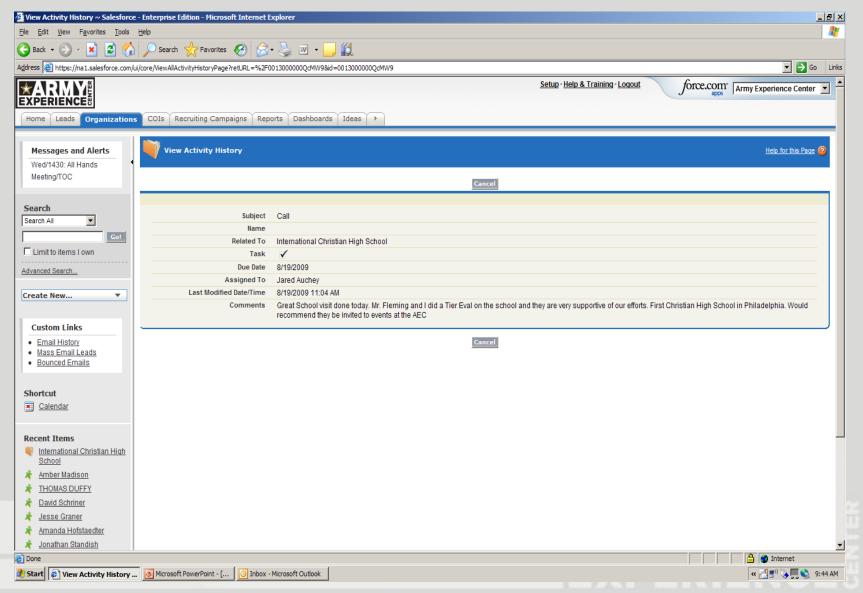


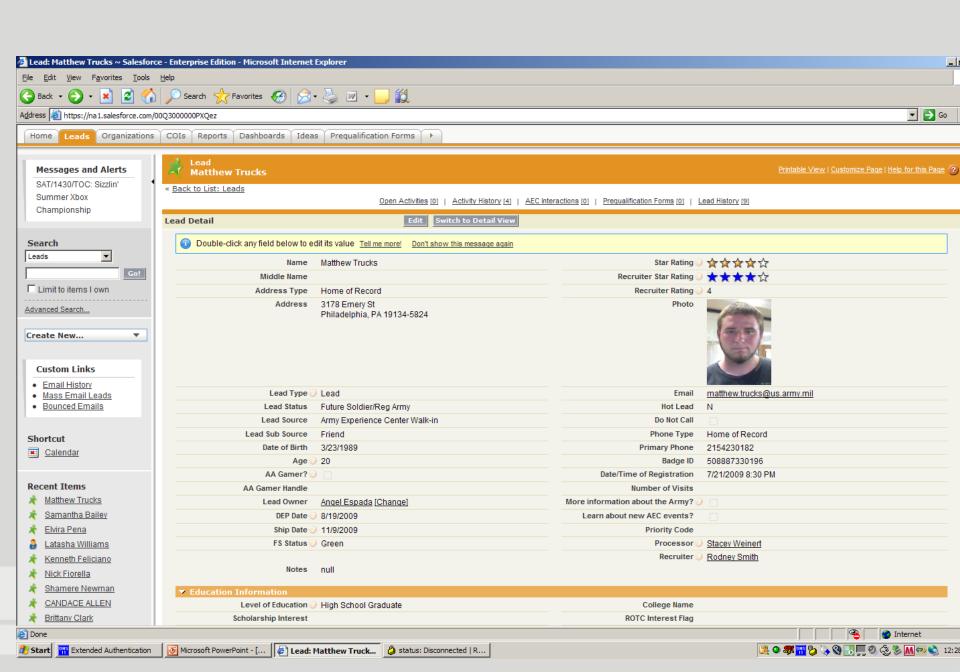
School Folders



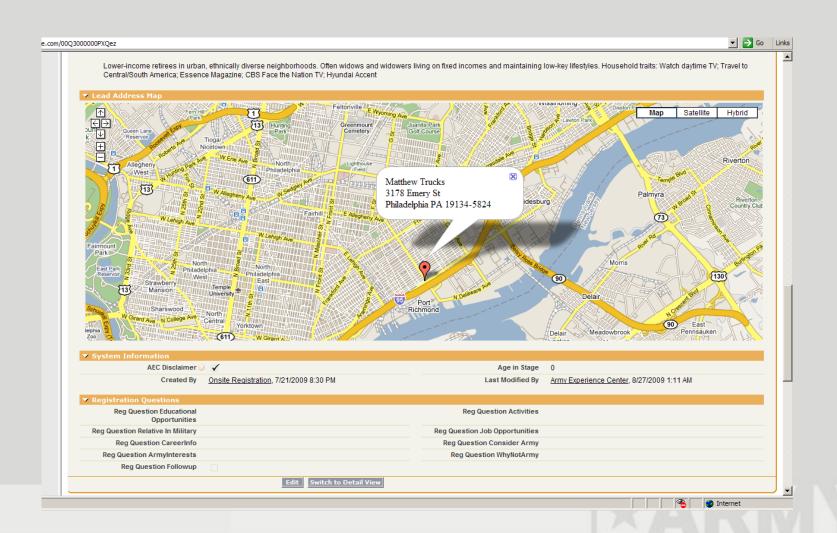
HE IN LES

School Activity Record

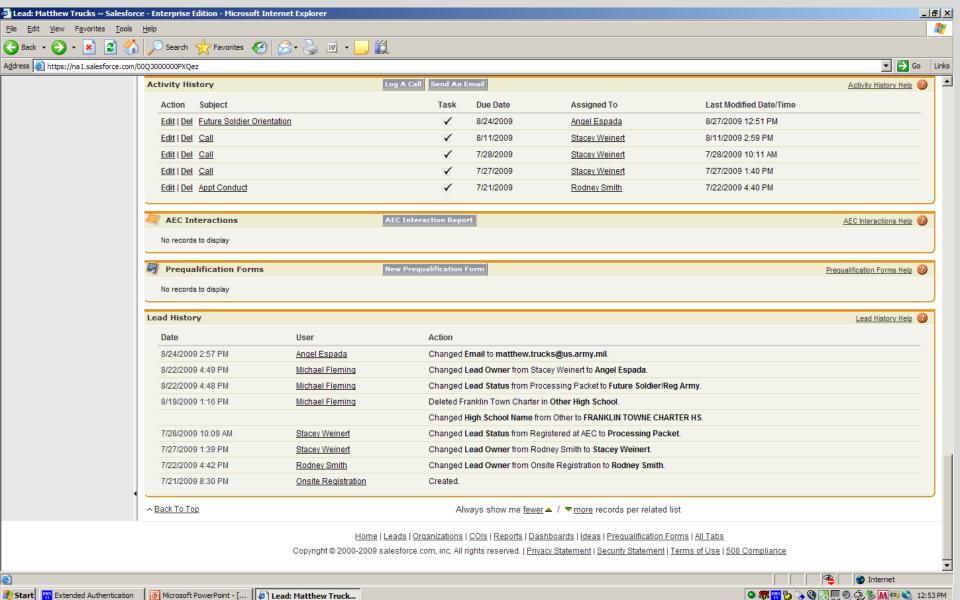




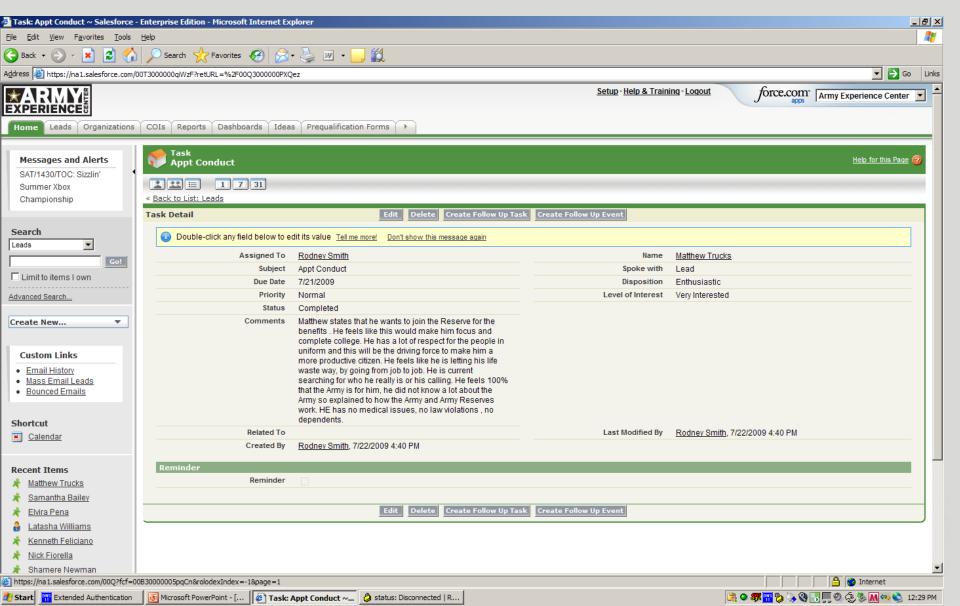
Address Mapping of Lead Record



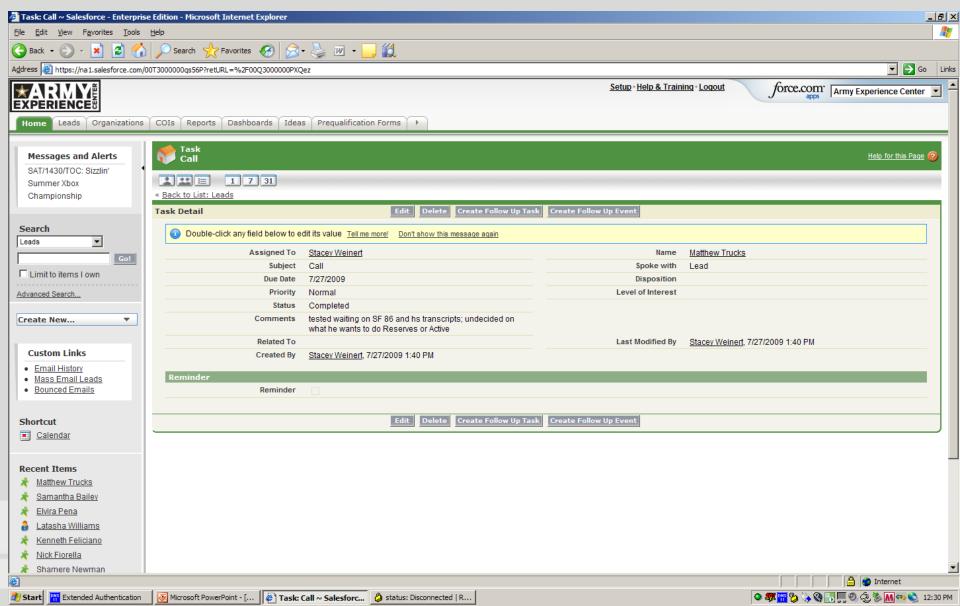
Lead Activity History



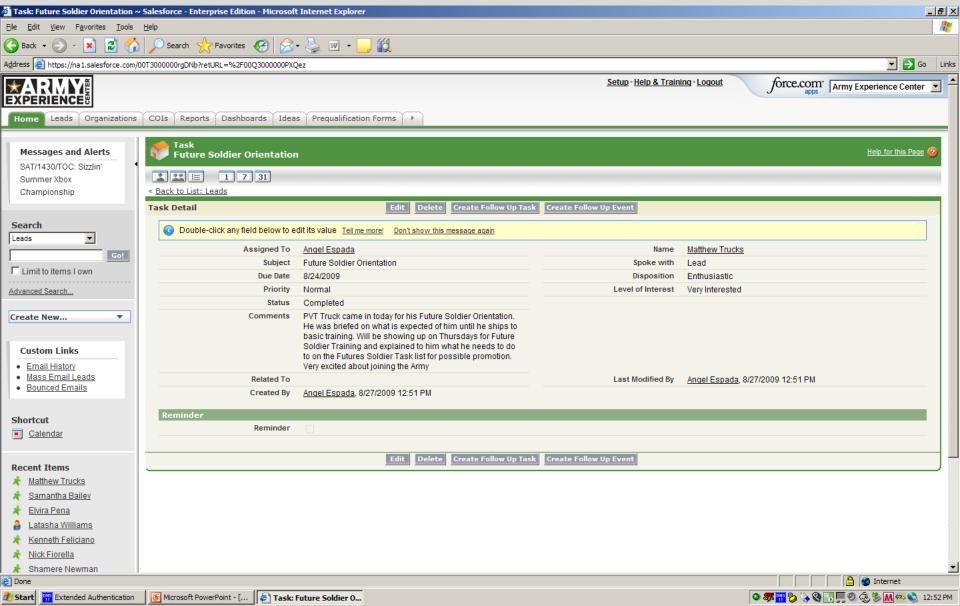
Lead Appoinment Notes



Record update from Processor



Record Update from Future Soldier PSG



Dashboards







AR Strength Management

Shaping and Balancing the Force

USAAC ACC: Research Consortium 2 September 2009





Purpose

□ Provide information on current strength posture, identify issues and resource constraints to help develop a way ahead for FY10 mission accomplishment and to adequately prepare for future missions

Agenda

- √ Strength Overview
- √ Shaping & Balancing Issues
- ✓ Accessioning Issues
- ✓ AR-RAP Update





FY 09 Weekly Strength Update

Weekly SELRES Strength		SELRES Strength						
As of 29-Aug-09	Off	WO	Enl	ESO	Actual			
TPU	26,731	2,210	157,856	183,830	186,797			
AGR	3,645	645	11,672	16,170	15,962			
IMA	2,889	133	735	5,000	3,757			
ТОТ	33,265	2,988	170,263	205,000	206,516			
Change from	15	48	(276)		(213)			

Monthly ACC: and Transfers

As of 31 JUL 09

Enlisted Missions

Agency	Annual Mission	YTD Mission	YTD Achieved	
USAREC	,			
NPS	19,000	19,000	19,408	
PS	3,500	3,040	3,206	
ARCD (IRR-TPU)	9,000	7,623	7,776	
HRC(AC-RC)	3,098	2,539	3,126	
Total	34,598	32,202	33,516	

previous week

Officer Missions

Agency & Mission	Annual	YTD	YTD
Agency & Mission	Mission	Mission	Achieved
USAREC AMEDD Mission Glide	880	728	676
USAREC Chaplain Target	70	58	49
ARCD IRR-TPU Mission	1,600	1,355	1,505
USAREC OCS Mission Glide	120	100	131
ARCD OCS Mission Glide	25	21	2
USAREC DC Mission Glide	85	71	23
ARCD DC Mission	350	256	525
HRC AC-RC Mission	426	354	456
USACC ROTC Mission Glide	650	560	291
ARCD Warrant Mission	350	291	317
Total	4,556	3,794	3,975



FY 09 Strength Update

SELRES Strength as of: 29-Aug-09

W	eekly/						I											
Current Week SELRES Strength					Previous Week SELRES Strength						Strength Changes from Previous Week							
	Off	WO	Enl	ESO	Actual		ТВИ	Off	WO	Enl	ESO	Actual			Off	WO	Enl	Total
TPU AGR	26,731 3,645	2,210 645	157,856 11.672	183,830 16,170	186,797 15,962		TPU AGR	26,701 3,642	2,147 644	158,494 11,601	183,830 16,170	187,342 15,887		TPU	20	51	(312)	(241)
IMA TOT	2,889 33.265	133 2.988	735 170.263	5,000 205,000	3,757 206,516	100.7%	IMA TOT	2,895 33,238	135 2,926	735 170,830	5,000 205,000	3,765 206,994	101.0%	AGR IMA	1 (6)	0 (3)	39 (3) _	40 (12)
101	33,203	2,300	170,200	200,000	200,510			·	·		,	·		TOT	15	48	(276)	(213)

Monthly-

		USAR ENL	USAREC	USAREC	USAREC	HRC A		Total USAR		HRC A	ARCD
Month of:		Total	Total	NPS	PS	RCT	ARCD	PS	Total	RCT	IRR-TPU
Jul-09	Mission	1,326	230	0	230	259	837	1,326	185	36	149
	Actual	1,605	489	239	250	396	720	1,366	222	71	151
	Delta	279	259	239	20	137	(117)	40	37	35	2
	Msn Pct	121.0%	212.6%		108.7%	152.9%	86.0%	103.0%	120.0%	197.2%	101.3%
YTD Thru:											
Jul-09	Mission	32,202	22,040	19,000	3,040	2,539	7,623	13,202	1,709	354	1,355
	Actual	33,516	22,614	19,408	3,206	3,126	7,776	14,108	1,961	456	1,505
	Delta	1,314	574	408	166	587	153	906	252	102	150
	Msn Pct	104.1%	102.6%	102.1%	105.5%	123.1%	102.0%	106.9%	114.7%	128.8%	111.1%
FY 09	Mission	34,598	22,500	19,000	3,500	3,098	9,000	15,598	2,026	426	1,600
	Actual	33,516	22,614	19,408	3,206	3,126	7,776	14,108	1,961	456	1,505
	Delta	(1,082)	114	408	(294)	28	(1,224)	(1,490)	(65)	30	(95)
	Msn Pct	96.9%	100.5%	102.1%	91.6%	100.9%	86.4%	90.4%	96.8%	107.0%	94.1%
FYTD I	/Isn Leadline	93.1%	98.0%	100.0%	86.9%	82.0%	84.7%	84.6%	84.4%	83.1%	84.7%

Enlisted Accessions and Transfers

Officer & WO Transfers



AR Strength MSC and below (as of 21 Aug 09)

GRADE	REQ	ОН	%ОН	
E1	0	9,479		
E2	0	10,534		
E3	26,055	24,675	172%	135%
E4	40,274	44,867	111%	∫ SL1
E5	31,145	30,840	99%	
E6	23,607	23,416	99%	
E7	22,723	13,509	59%	
E8	6,812	6,686	98%	
E9	1,493	1,559	104%	
Total	152,109	165,565	109%	
GRADE	REQ	ОН	%ОН	
W1	0	504		
W2	2,005	1,044	77%	
W3	882	597	68%	
W4	638	470	74%	
W5	109	76	70%	
Total	3,634	2,691	74%	

Officer				
GRADE	REQ	ОН	%ОН	
01	0	1,954		
02	4,196	4,382	151%	
03	12,504	7,921	63%	
04	10,581	7,335	69%	
05	5,404	5,576	103%	
06	1,395	1,557	112%	
07	90	51	57%	
08	26	24	92%	
Total	34,196	28,800	84%	

CSR	0	1,090	
-----	---	-------	--

		Totals	189,939	198,146	104%
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66%



Shaping and Balancing Issues

- Shaping and balancing the force will require targeted recruiting, precise missioning, tailored incentives (adequate funding) and available training
- Currently, many of these elements are planned and coordinated independently and in different forums; this complicates precision accessioning
- We have no method to enlist applicants who qualify for AR service but who do not qualify for available jobs; in times of plenty we need to enlist them into the IRR
- □ AR Strength Management Strategy requires improved coordination with internal staff and with our accessioning agencies to yield resource savings and achieve the mission

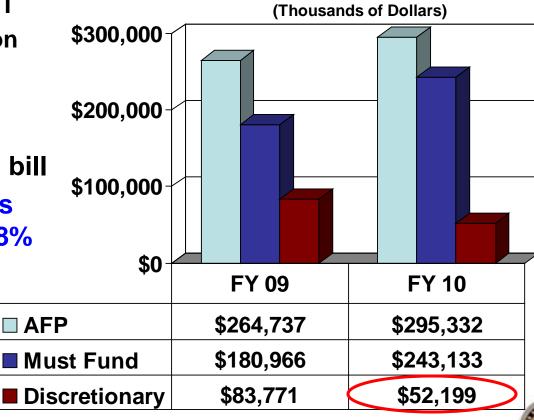




Accessioning Issues

- Over 40K vacancies in FY09
- Less than 22K vacancies
 - ✓ Less than 14K Primary SL1 Vacancies in REQUEST
 - √ ~8,000 SL1 Mobilization Vacancies supporting ARFORGEN
- Installments created significant "must fund" bill
- Discretionary incentives budget decreased by 38%

Recruiting Incentives Funding





AR-RAP Changes

- □ Current program pays \$2K bonus to a recruiting assistant (RA) for every accession
- ☐ FY10 a Tiered Bonus Program will pay RAs more for:
 - ✓ Accessions into critical shortage MOSs
 - ✓ Prior Service Accessions
 - ✓ Officer Accessions
 - √ OCS/DC Accessions
- □ Tiered Bonuses will result in cost savings of \$1.5M
- Looking at ways to automate the transfer of RA contact information to USAREC





Summary

- Recruiting Challenges will be greater in FY10
- We need to develop a more detailed methodology to calculate recruiter/resource requirements
- Improve synergy between Funding, Training, Accessioning and Incentives forums to achieve better precision
- Consider IRR enlistments for other than 09L





QUESTIONS?



C. Stewart Slatton, II Lieutenant Colonel United States Army Reserve

ARMY STRONG.

Chief, ACC: Division, G-1 **US Army Reserve Command** 1401 Deshler Street SW Fort McPherson, GA 30330-2000

goarmyreserve.com

charles.slatton@usar.army.mil charles.slatton@us.army.mil

Office: (404) 464-8929 Cell: (678) 799-4627

www.usar.army.mil







BACK UP



AR-RAP Production (as of 29 Aug 09)

- Annual Accessions
 - ✓ FY 08 ACC: 3,752
 - ✓ FY 09 ACC: 4,117
- □ Program To Date
 - **✓** Active RAs: 66,161
 - ✓ FS Nominations: 26,990
 - ✓ PS ACC: 3,183
 - ✓ PS Affiliates: 2,312
 - **✓ NPS ACC: 4,904**
 - ✓ NPS Shippers: 3,518





Nominees by Current Status

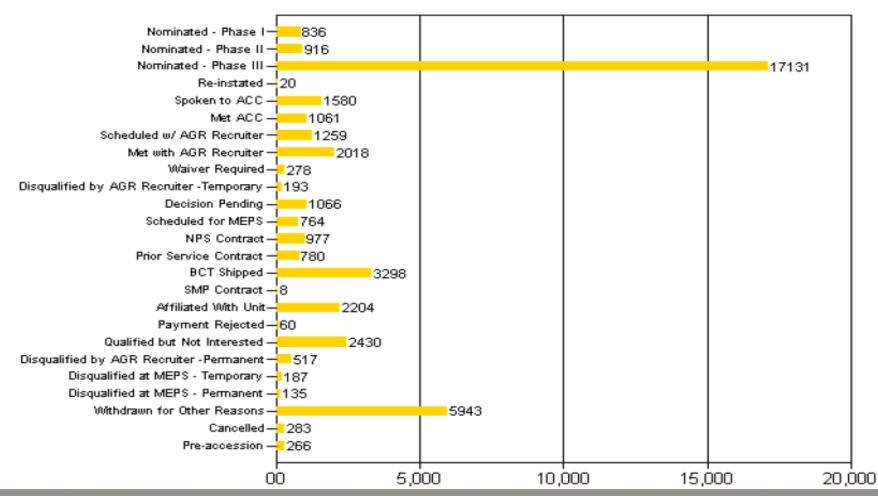
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Total Active FS: 26929

Total Historical FS: 44210

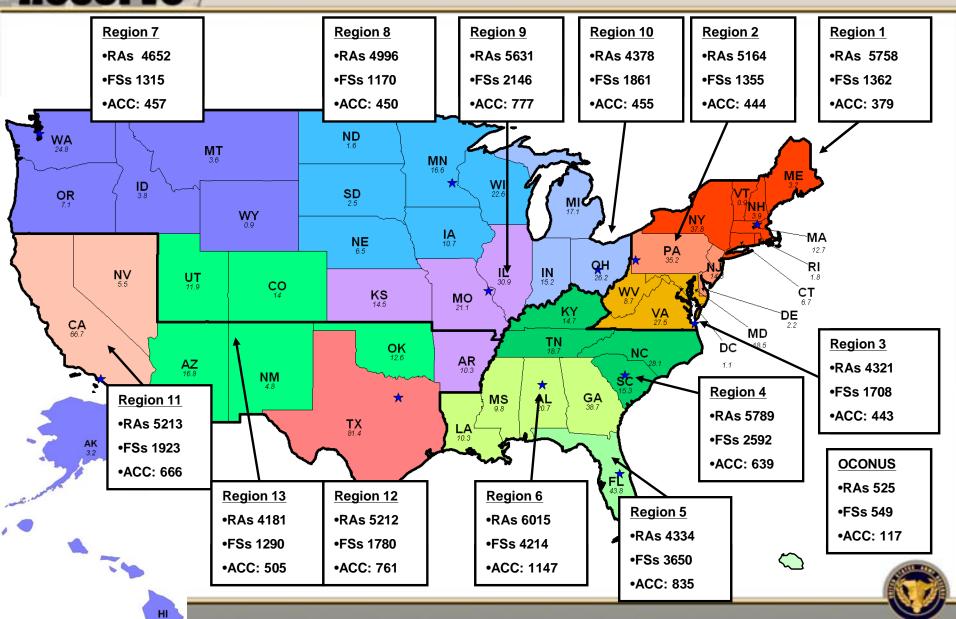
*Click on status colum to see break down by state.

All Future Soldiers





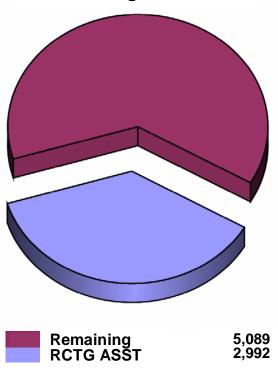
AR-RAP Regional Activity





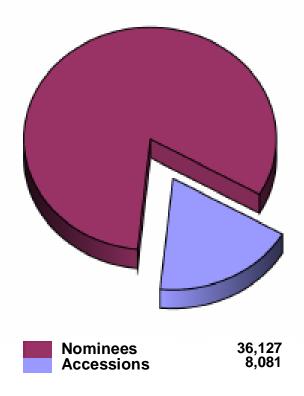
RA Data and Contract Ratio

AR-RAP Accession to Recruiting Assistant



Rate of: 37%

Nominee to Contract Ratio



Ratio: 5 to 1



US Army Recruiting Command



Adaptive Mission Processes

by

Mike Nelson, ACoS, G-2

mike.nelson@us.army.mil 502-626-1121

September 1, 2009



DA Accession Msn USAREC Contract Msn RA RA **MISSION** Contracts 80,000 **USAR USAR MISSION** Contracts 26,500 **DA Accession Requirements**

Defense Planning Guidance

Retention/ Attrition Rates

Based on

Force Structure

Fiscal Constraints

Mission Process

Mission the recruiting force to maintain FSTP levels

Concentrate placement into critical MOS'

Maintain presence in all recruiting markets

> Enable success and improvement

Annual Contract Mission Monthly Phase Lines to meet DA Requirements

Brigade Contract

Msn

- DA Monthly Accession Flow
- Predicted In-Month Training Seat Losses

Battalion Contract Msn

- Out Year Mission Requirements
- Entry / Exit Pool
- YTD Achievements
- Battalion Future Soldier Loss Rates
- Forecasted On Production Recruiter Strength

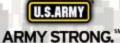




Station Contract Msn

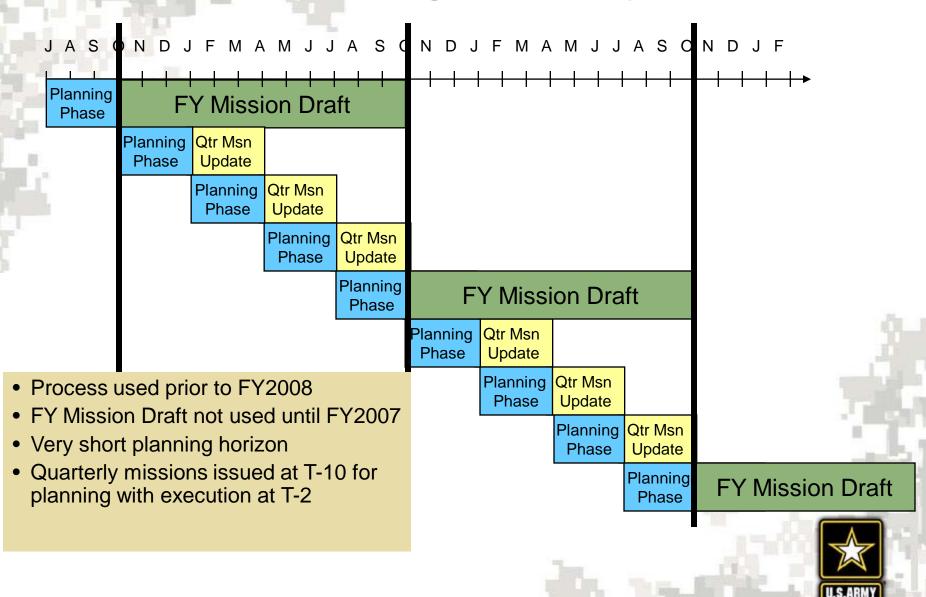


- Reward at Contract & Accession
- * Track Training Base Attrition for QC





Historical Rolling Quarterly Mission



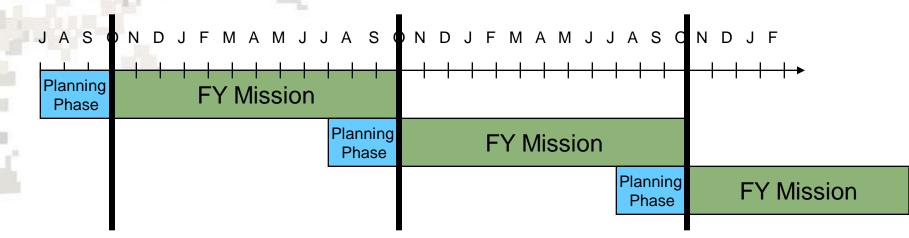
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Impact on Recruiting Force

- Recruiting organizations are different
 - It's a continuous mission—no block leave or reset
 - When do you take leave and send NCO's to their professional development courses
 - Quality of life becomes difficult to manage
- Limited ability to do long range planning
 - Impacts development of local campaign plans
 - Local advertising investment
 - Local partnerships
 - Lack of anticipation of future difficulty
- Commanders asked for an annual mission



Annual Mission Process

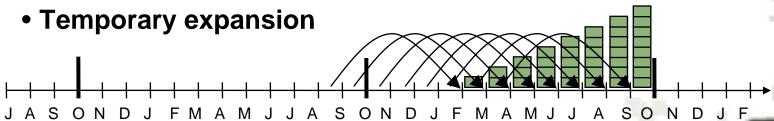


- Process used in FY2008 & FY2009
- Long range planning horizon
- No view of future FY beyond current FY
- Each FY mission was revised in 3rd or 4th quarter due to either force structure changes or external requirement changes



Resource Implications

- Key resource elements for recruiting
 - Number of recruiters
 - Changes require time to build-up or draw-down
 - 90-120 days to identify and move potential recruiters
 - Flow limited by Army Recruiter Course capacity
 - AR hiring process is more complicated
 - Many tertiary support items
 - GOV's
 - Computers and communications
 - Facility space



Resource Implications

- Key resource elements for recruiting
 - Number of recruiters stations
 - Position, Analysis, & Evaluation (PAE) process aligns the recruiting force to the market
 - Evaluated periodically as the market moves
 - Evaluated when numbers of recruiters change significantly
 - Controlled through DoD and the Corp of Engineers
 - Commercial space based upon leases
 - Operational costs

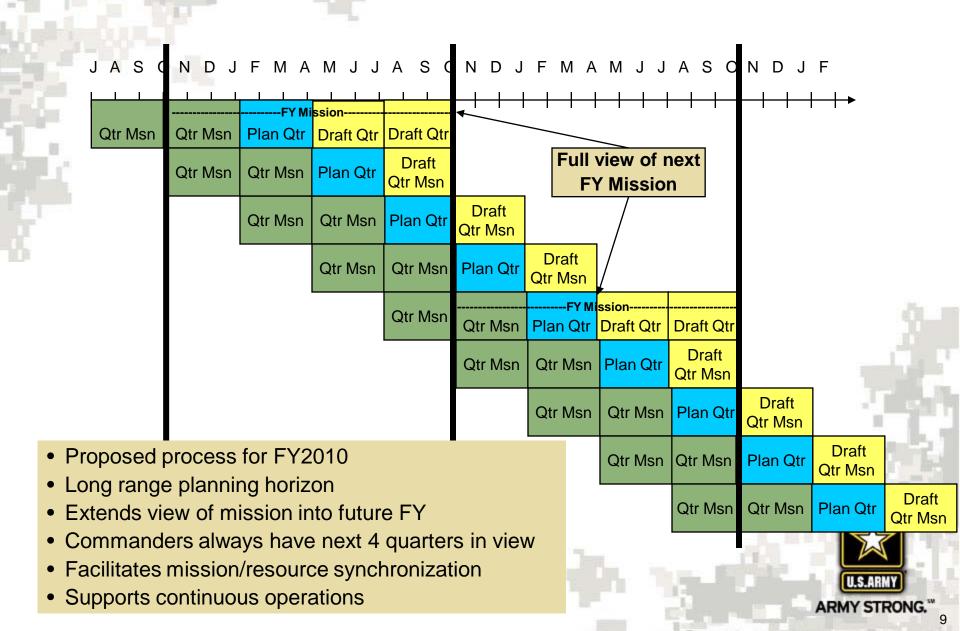


How Should Mission & Resourcing Work?

- Mission without resources doesn't work
- Resource planning should be synchronized
 with the mission
- Local commanders should have some predictability for the future



Rolling Quarter Annual Mission



Rolling Quarter Annual Mission Concept Objectives

- Provide a continuous 4 quarter planning horizon for subordinate commands
- Seeks to stabilize mission
 - Maintain planned missions for next two quarters
 - Program mission changes into the QTRs beyond execution QTR +2
 - Synchronize deployment of augmented resources in time with the increased mission
- Can lead to improved quality of life



What if the command mission changes?

Battle Staff Actions

- Assess impact of size and timing of change
 - Can the command absorb increase without impact to contract mission?
 - Can the command buffer the increase so that any contract mission change occurs to the Draft Quarter and beyond?
- Identify resource requirements to achieve the change
- Identify timelines for resource augmentation

G2 Specific Actions

- Identify contract mission changes to the Bde/Bn level
- WARNO to Bdes for staff involvement/review
- Collaborative mission refinement

Commander Involvement

- CG approves all missions
- Brigade Commander assessments of proposed mission collaborated for CG decision/approval



Station Commander Pros & Cons

Advantages	Disadvantages
+ Most prefer this concept over Annual cycle	- Increases time required to process missions by
+ Station Commanders will stay in touch with their mission (they touch missions every quarter)	as much as a four-fold -Will require several iterations to develop new processes
+ There will be a more fluid continuity during leadership changes	- RQAM may look further out than the station commanders can effectively plan for
+ Continuous mission view 9-12 months out resulting in predictability and improved QOL.	
+ More lead time for planning	
+ Will create a consistent battle rhythm	
+ Should slow down the "11th hour" changes in assigned missions	

Implications for Higher Echelons

- Top sets the requirements—bottom identifies the resources
- Typically POM planning drives staff processes
 - Provides a 5 year resource horizon
 - Final requirements tweaked till execution
 - Resourcing not always synchronized
- How can we change the paradigm to adjust planning to facilitate execution?
- New mission dynamics
 - FY09 AR cap on NPS
 - New focus on precision



US Army Recruiting Command



Questions?

Mike Nelson, ACoS, G-2 mike.nelson@us.army.mil 502-626-1121





2009 Army Accessions Research Consortium

Recruiting Operations Track Outbrief "Revolution in Recruiting Operations"



Operations Track: "Revolution in Recruiting Operations"

<u>Purpose:</u> Provide an informative set of briefings on recent initiatives that attempt to radically reshape both enlisted and officer recruiting. The briefings will provide an opportunity for attendees to learn *key findings* from recently completed initiatives, what initiatives are currently ongoing, and what future initiatives are being planned. The primary goal is to identify *gaps and potential solutions* in recruiting operations. Briefings will cover operational, administrative and technological revolutions.

Goals:

- 1. Provide research staff with an understanding of the recent, ongoing and planned operational, administrative and technological revolutions.
- 2.Identify current gaps.
- 3.Exchange ideas for transformation and potential solutions for future recruiting operations.
- 4. Establish collaborative relationships and provide opportunities to network with other researchers.

Participants

AEC

ARC

ARCIC

ASA-M&RA

Booz Allen Hamilton

JAMRS

MRM Worldwide

National Guard

Navy Recruiting Command

OCAR

Gallup Organization

HRC - Alexandria

TRAC -Lee

USAAC G2/9

USAREC G2

USAREC G5

USARC G1

USMEPCOM

Gaps Potential Solutions

Recruiting currently focused on volume and not MOS precision

Explore using precision bonus and tactical segmentation targeting for precision MOS missioning and recruiting

Current processes are not synched with ARFORGEN Model

Explore synchronization of mission process, training seats and ARFORGEN

Currently bonuses and incentives create intercomponent competition

Explore possibility of elevating quarterly incentive review board to a quarterly GO panel to set incentives based on service requirements.

Footprint vs. Geographic Diversity

Gaps Potential Solutions

Large recruiting footprint results in geographic diversity, but comes at a large cost. \$43.5 M for 1,638 stations.

Geographical diversity representing a cross section of America vs. reduced footprint

Explore mobile recruiting vehicles, MOU with Army Reserve for pilot program to use USAR centers in key locations.

Determine the balance between targeting and exploiting markets and maintaining cross section of America.

	The second secon	
Gaps	Potential Solutions	
Negative Cultural bias against recruiting duty	Force a cultural change, make recruiting attractive	
Current process for managing recruiters is to focus on recruiter deficiencies	Shift focus to support Recruiters with resources	
Suboptimal process, requiring many difficult individual tasks	Shift focus to a division of labor	
Soldiers placed in unfamiliar environment requiring specialized training and experiences	Focus instead on critical Soldier tasks	
Recruiting is focused on individual efforts	Instill team concept common to all other aspects of recruiting to the Army	

Gaps Potential Solutions

Overseas contingency operations create demand for recruiters. Results in fluctuation in the number of recruiters based on changing Army resources

Experiment by utilizing civilian manpower for non-Soldiers tasks and return NCO's to the operational Army.

Shifting from a volume mission to a high quality precision mission or greater quality within a band of excellence requires greater resources

Conduct research to quantify the marginal increase in resources needed to shift to a precision mission.

Gaps Potential Solutions

Closed, "stove-piped" architecture currently RA, AR, Civilian, ROTC, ARNG individual focus creates intercomponent competition

Explore Total Army Recruiting and single location for seeking Army opportunities

Public image of Recruiters poor

Explore opportunities such as leveraging PAYS as incentive for high quality non-qualified applicants

Reserve and National Guard Market Share

Two years of data gathered, may begin utilizing data to create

Gaps Potential Solutions

Recruiting organizations are different than normal Army units – continuous mission, no reset, no block leave, difficulty finding time for professional development. Results in reduced quality of life.

Limited ability to do long range planning impacts development of local advertising campaign plans and partnerships.

Complicated hiring process and Army Recruiter School capacity limitations.

Long logistics tail when recruiter number fluctuate includes of GOV's, computers, facility space Work with other stake holders to receive annual mission no later than six months prior to start of the FY, USAREC then uses a rolling quarter annual mission to provide long range planning and always have next four quarters in view.

Gaps Potential Solutions

Recruiting environment has changed. Currently in the Army Reserve a recruiting a contract equals an accession, once mission is achieved this forces a cesation of recruiting, wasting valuable resources

Explore creation of a Army Reserve delayed entry program or delayed training program.

Gaps?

- Army Recruiting operates with a system that doesn't:
 - have the efficiencies of a division of labor and specialization of skills,
 - maximize recruiter interaction with the target population,
 - leverage the latest technology,
 - provide a positive quality of life for recruiters,
 - unify Army recruiting efforts.
- Army recruiting operates with a structure that:
 - uses more Soldiers than the Army can afford given current end strength caps and overseas contingency operations,
 - depends too heavily on fixed facilities instead of virtual and mobile capabilities,
 - forces leaders into a management role vice a leadership role.
- Process does not optimize Soldiers time for engaging the public resulting in greater inefficiency
- Recruiting requires so many soldiers that selection tools provide little screening ability
- System is completely reliant on individual efforts vice teams and often places Soldiers in an ethical dilemma to balance quantity and quality
- Soldiers and leaders find themselves operating in an entirely new career field requiring training and experiences they don't normally have
- Initial and sustained training ineffective due to wide variety of tasks and lack of dedicated training time
- Efforts of multi-component Soldiers & Leaders are not synchronized due to lack of knowledge, time to train, and little reason for cooperation to achieve missions
- No standardized force development system in place for recruiting
- Public not provided a single location, real or virtual, for understanding and seeking Army opportunities
- Soldier heavy leads refinement process
- Quantity & Quality mission on back of individual Soldiers
- Server based, VPN accessed, non-integrated IT solutions
- Lack of integration with ROTC recruiting and local TPU support
- Redundant trips to MEPS
- Lack of well-defined, Army aligned Officer/NCO responsibilities
- Broad skill, unfocused, non-dedicated training
- RA or AR enlisted focus mindset
- Individual based, Soldier only process
- Extremely large number of Soldiers
- Some online applications
- Small stations servicing outlying communities
- Strip mall "offices" off the beaten path
- Bulkier, mid-tech equipment
- Dated table & banner event displays
- Nationally focused marketing with some local customization
- Non-professional, repetitive, local market event planning

US Army Recruiting Command

FY10 Mission and Recruiter Allocation Models



for

Army Accessions Research Consortium

by

MAJ Andrew Ehlert

01 September 2009



Agenda

- **Purpose**
- Facts
- New Concept Development
- Model Development
- Regular Army Mission and Position Model COAs
- Army Reserve Mission and Position Model COAs
- Combined Analysis (RA and USAR together)



Purpose

Provide an overview of the models used to distribute the enlisted contract mission and recruiter authorizations.



Facts

- **Accession mission range**
 - RA from 70 to 80
 - AR from 17K to 27K
- Recruiter authorizations
 - 100 Integrated Contract Recruiters (-300/75% reduction)
 - 6521 RA Recruiters (-564 / 8% reduction) (current plan)
 - 1524 AR Recruiters (-250 / 14% reduction) (current plan)
- AR market limited to 50 miles from Reserve Center
- Field Force prefers simple models using established / accepted variables



New Concept Development

- April 13-17, G2 and BDE S2s held a modeling conference to collaboratively develop COAs for the FY10 mission and position models
- Key recommendations:
 - 1. Shift strategy from volume success to pursuit / capture of the quality market
 - Achieve quality first, then volume will follow
 - Emphasize DoD GSA past production (proven quality market)
 - Limit modeling effort for "Other" contracts since those will result from prospecting for quality contracts
 - 2. Mission and position models should correlate more closely
 - 3. Balance the workload across the command
 - Pursue consistency in GSA required write-rate
 - Assign the 'Other' mission so as to balance the overall required effort
 - Consider the combined impact of RA & AR missions



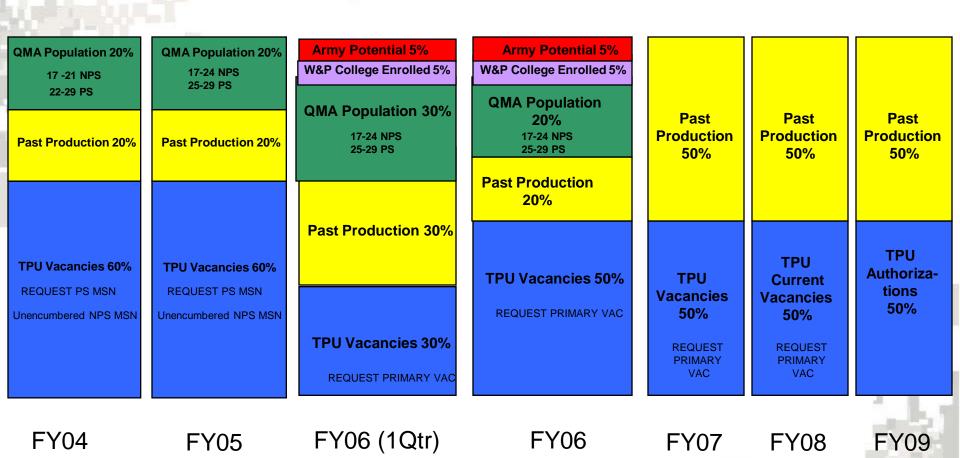
Chicken or Egg

The Relationship of Allocation of Mission and Positioning of Recruiters:

- 1. Conduct market analysis, then...
- 2. Mission to the market, then...
- 3. Position recruiters to accomplish the mission



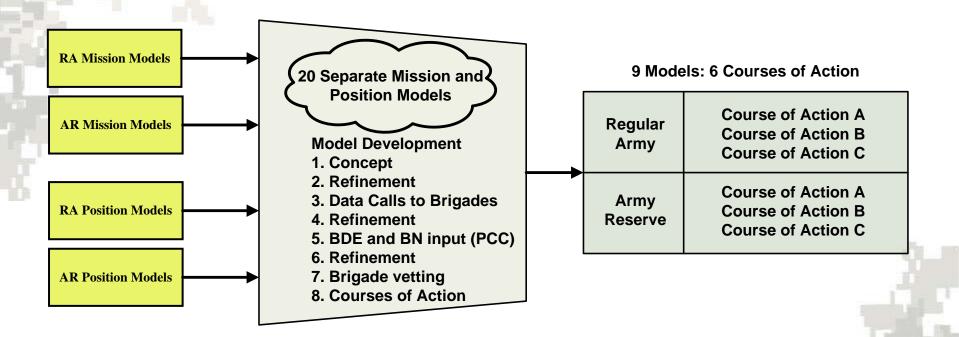
USAR Mission Models



Change in FY08 from "past 12 month average vacancies" to "current vacancies" Change in FY09 to TPU authorizations instead of vacancies.

· -

Model Development: Overall Process





Model Development: Considered Variables

- Past production
 - Volume
 - By category (GA, SA, Other, Prior service)
- Qualified military available (QMA)
 - 17-24 year old population
 - 25-29 year old population
- Market potential for Army enlistment*
- School populations
 - High School
 - Two year college population
 - Four year college population
- AR unit structure
 - Authorizations (SL 1 only)
 - Unit vacancies (SL 1 only)



^{*} Potential, Propensity, Penetration, Market Segmentation, etc.

Model Development: Screening Criteria

Resources vs. Mission: Difference between the Brigade's share of recruiters and its share of quality mission (troops to task)

"Delta" = (Bde % of Cmd Recruiters) – (Bde % of Cmd GSA Mission)

Regular Army

Current	Goal for
Delta	Delta
1.24%	1.00
-3.08%	-1.00
0.74%	0.75
-1.21%	-1.00
2.31%	1.00
	Delta 1.24% -3.08% 0.74% -1.21%

Army Reserve

	Current	Goal for
BDE	Delta	Delta
1st	1.17%	1.00
2nd	-1.14%	-1.00
3rd	-0.57%	0.75
5th	-1.09%	-1.00
6th	1.64%	1.00

Total

	Current	Goal for
BDE	Delta	Delta
1st	1.22%	1.00
2nd	-2.60%	-1.00
3rd	0.42%	0.50
5th	-1.19%	-1.00
6th	2.15%	1.00



^{*} Current = FY10 mission and recruiters allocated by FY09 models

^{*} Goal = the delta which is acceptable or desired by each BDE

Model Development: New Contract Mission Model Approach

- In the past, we have used the same model methodology to distribute the GA, SA, and Other contract missions. This was called the "layered" approach.
- This year, the proposal is to use two different methodologies, one method for the GSA contract mission and a second method for the Other contract mission.
- The GSA contract mission will be distributed according to the methodology selected by the CG (COAs A, B, C).
- The Other contract mission will be distributed according to a common methodology designed to balance the total contract workload at the battalion level. A single method was developed in concert between USAREC G2 and the Brigade S2s during the April mission conference.

Regular Army

Enlisted Contract Mission and Position Models



RA Contract Mission Models

GSA contract mission distribution models

RA Mission Model 1				
100% DOD GSA Past Production				

RA Mission Model 2				
90% DOD GSA Past Production				
10% Projected QMA (17-24)				

- DOD GSA Past Production covers 4 years, weighted 40-30-20-10 (40% on most recent year)
- The "Other" contract mission is distributed to battalion level based upon the delta between a battalion's required GSA gross write rate and its demonstrated (4-year average) volume gross write rate. The deltas for all battalions will be summed to USAREC level. A Battalion's proportion of the Other mission is simply its share of USAREC's total delta.
- Example: The Albany Bn historical volume GWR is 0.97 and its FY10 GSA required GWR is .56; the delta is 0.41. Given the total delta across USAREC is 27.7, then Albany's proportion is ~1.48% (0.41/27.7)
- Model 1 is status quo (FY09 Model)
- Model 2 shifts to markets of opportunity

RA "Other" Contract Mission Distribution

						OTH Prop
			FY10	4-yr AVG		(% of total
Ŧ	BN	RSID	ROWR	VOL WR	Delta	Gap)
	ALBANY	1A	0.56	0.97	0.41	1.48%
L	BALTIMORE	1B	0.57	0.98	0.41	1.48%
	NEW ENGLAND	1D	0.56	1.18	0.62	2.25%
,	HARRISBURG	1E	0.58	1.31	0.73	2.62%
l.	NEW YORK CITY	1G	0.53	0.99	0.47	1.68%
	MID-ATLANTIC	1K	0.54	0.78	0.25	0.88%
ŀ	SYRACUSE	1N	0.58	1.22	0.64	2.30%
ď	BECKLEY	10	0.59	1.23	0.65	2.33%
Ļ	ATLANTA	3A	0.58	1.47	0.89	3.19%
	COLUMBIA	3D	0.58	1.30	0.72	2.59%
	JACKSONVILLE	3E	0.60	1.47	0.87	3.13%
	MIAMI	3G	0.53	1.22	0.69	2.48%
	MONTGOMERY	3H	0.59	1.63	1.04	3.74%
	RALEIGH	3J	0.59	1.41	0.82	2.94%
	TAMPA	3N	0.59	1.32	0.73	2.63%
	BATON ROUGE	3T	0.57	1.35	0.78	2.81%
	DALLAS	4C	0.60	1.75	1.15	4.15%
	DENVER	4D	0.59	1.37	0.79	2.84%
	HOUSTON	4E	0.59	1.59	1.00	3.59%
	KANSAS CITY	4G	0.58	1.44	0.85	3.06%
	OKLAHOMA CITY	4J	0.59	1.70	1.11	4.01%
	SAN ANTONIO	4K	0.59	1.59	1.00	3.58%
	PHOENIX	4P	0.59	1.42	0.84	3.01%
	CHICAGO	5A	0.55	0.95	0.39	1.41%
	CLEVELAND	5C	0.58	1.17	0.60	2.14%
	COLUMBUS	5D	0.58	1.15	0.57	2.05%
	INDIANAPOLIS	5H	0.58	1.30	0.72	2.58%
	GREAT LAKES	5I	0.57	1.21	0.65	2.33%
	MILWAUKEE	5J	0.58	1.25	0.67	2.42%
	MINNEAPOLIS	5K	0.57	1.13	0.56	2.02%
	NASHVILLE	5N	0.58	1.31	0.73	2.63%
	LOS ANGELES	6F	0.54	1.17	0.62	2.24%
	PORTLAND	6H	0.59	1.35	0.77	2.76%
	SACRAMENTO	61	0.59	1.80	1.21	4.35%
	SALT LAKE CITY	6J	0.58	1.48	0.90	3.22%
	SO CALIFORNIA	6K	0.57	1.35	0.77	2.79%
	SEATTLE	6L	0.58	1.13	0.55	1.96%
	FRESNO	6N	0.57	1.22	0.64	2.32%
	Total				27.79	

Mid-Atlantic has the lowest volume write rate in the command (0.78). Given that its required GSA write rate consumes nearly all of its proven productivity, the Other mission allocation method will assign Mid-Atlantic only 0.88% of the command's required Other contracts as a mission.



Sacramento has the highest volume write rate in the command (1.80). Given that its required GSA write rate consumes about 1/3rd of its proven productivity, the Other mission allocation method will assign Sacramento 4.35% of the command's required Other contracts as a mission.



RA Recruiter Allocation Models

Recruiter distribution of 6521 OPRA

RA Position Model 1

30% Projected QMA (17-24)

25% DOD GA Past Production

15% DOD SA Past Production

10% Potential

10% 2 Year College

5% 4 Year College

5% Other

RA Position Model 2

80% DOD GSA Past Production

20% Projected QMA (17-24)

- Model 1 is status quo (2005 2009)
- Model 2 shifts to markets of opportunity



RA Courses of Action (Paired Combinations)

COA A Status quo

COA B Middle ground

COA C Markets of Opportunity

RA Mission Model 1 100% DOD GSA Past Production

90% DOD GSA Past Production 10% Projected QMA (17-24)

90% DOD GSA Past Production 10% Projected QMA (17-24)

RA Position Model 1 30% Projected QMA (17-24) 25% DOD GA Past Production 15% DOD SA Past Production 10% Potential 10% 2 Year College 5% 4 Year College 5% Other

RA Position Model 1
30% Projected QMA (17-24)
25% DOD GA Past Production
15% DOD SA Past Production
10% Potential
10% 2 Year College
5% 4 Year College
5% Other

RA Position Model 2
80% DOD GSA Past Production
20% Projected QMA (17-24)



^{*} COA D screened out (RA Mission Model 1 combined with RA Position Model 2)

RA Courses of Action Comparison

Regular Army	Courses of Action						
	CO	AΑ	COA B Middle Ground		CO	COA C	
Evaluation Criteria	Status	s Quo			Markets of Opportunity		
	Metric	Rank	Metric	Rank	Metric	Rank	
Balances Troops to Task	1.34%	3.4	1.91%	2.8	0.99%	3.8	
Focus on Quality	70%	3.2	65%	2.9	85%	3.9	
Total Score		6.6		5.7		7.7	

- Sum of Scaled Ranks
 - Distributed 10 points between the COAs per criteria
 - Retains a sense of the "distance" between metric values
- Higher rank is better



RA COA C Results

- **Brigade quality mission distribution**
- Assumed 72.7K contract mission (64K accessions, 12% LR)
- **Quality write rate consistent across the Command**
- For Table, A B = D

	\
Λ)
A	





BDE	OPR Authorizations	OPR Share	Quality Mission	Quality Mission Share	OPR Share - Quality Mission Share*	Current Delta	Required Quality Write Rate
1st	1,251	19.18%	8,280	18.36%	0.82%	1.22%	0.55
2nd	1,347	20.66%	9,870	21.89%	-1.23%	-2.60%	0.61
3rd	1,336	20.49%	8,951	19.85%	0.64%	0.42%	0.56
5th	1,382	21.19%	9,970	22.11%	-0.92%	-1.19%	0.60
6th	1,205	18.48%	8,020	17.79%	0.69%	2.15%	0.55
Total	6,521	100.00%	45,091	100.00%	0.00%	0.00%	0.58

^{*} Screening and Evaluation Criteria



Army Reserve

Enlisted Contract Mission and Position Models



AR Contract Mission Model

AR GSA contract mission distribution

AR Mission Model 1 50% GSA Past Production (AR) 50% TPU Authorizations (SL1)

AR Mission Model 2 50% GSA Past Production (AR) 25% TPU Authorizations (SL1) 25% TPU Vacancies (SL1)

AR Mission Model 3 40% GSA Past Production (AR) **30% TPU Authorizations (SL1)** 20% TPU Vacancies (SL1) 10% Projected QMA (25-29)

- Model 1 is status quo (FY09 Model)
- Model 2 adopts a middle ground approach
- Model 3 shifts to emerging markets



AR Recruiter Allocation Model

OPAR Recruiter distribution

AR Position Model 1 40% GSA Past Production (AR) 30% TPU Vacancies (SL1) 20% TPU Authorizations (SL1) 10% Projected QMA (25-29)

AR Position Model 2					
30% GSA Past Production (AR)					
30% TPU Authorizations (SL1)					
20% TPU Vacancies (SL1)					
20% Projected QMA (25-29)					

- Model 1 is status quo (2008 2009)
- Model 2 is population centric



AR Courses of Action

COA A
Status quo

COA B Middle ground

COA C Markets of Opportunity

AR Mission Model 1

50% GSA Past Production (AR) 50% TPU Authorizations (SL1)

AR Mission Model 2

50% GSA Past Production (AR) 25% TPU Authorizations (SL1) 25% TPU Vacancies (SL1)

AR Mission Model 3

40% GSA Past Production (AR)

30% TPU Authorizations (SL1)

20% TPU Vacancies (SL1)

10% Projected QMA (25-29)

AR Position Model 1

40% GSA Past Production (AR)

30% TPU Vacancies (SL1)

20% TPU Authorizations (SL1)

10% Projected QMA (25-29)

AR Position Model 1

40% GSA Past Production (AR)

30% TPU Vacancies (SL1)

20% TPU Authorizations (SL1)

10% Projected QMA (25-29)

AR Position Model 1

40% GSA Past Production (AR)

30% TPU Vacancies (SL1)

20% TPU Authorizations (SL1)

10% Projected QMA (25-29)

• Combinations involving AR Position Model 2 were screened out, thus do not appear as viable Course of Action



AR Courses of Action Comparison

Army Reserve	Courses of Action						
	CO	AΑ	CO	COA B		COA C	
Evaluation Criteria	Status Quo Metric Rank		Middle	Middle Ground		Markets of Opportunity	
			Metric	Rank	Metric	Rank	
Balances Troops to Task	1.41%	2.1	0.67%	3.6	0.36%	4.3	
Focus on Quality	45%	3.5	45%	3.5	40%	3.0	
Total Score		5.6		7.1		7.3	

- Sum of Scaled Ranks
 - Distributed 10 points between the COAs per criteria
 - Retains a sense of the "distance" between metric values
- Higher rank is better
- "Simplicity" ranks were not calculated since each COA scored identically on the metric

AR COA C Results

- Supports AR goal of shape the force versus fill
- Assumed 23.2K contract mission (21K accession, 12% LR)
- Write rates based on 1524 Recruiter authorizations, a level to be reached at end of FY 11
- For Table, A − B = D

В

BDE	OPR Authorizations	OPR Share	Quality Mission	Quality	OPR Share -		Required
				Mission	Quality Mission	Current Delta	Quality Write
				Share	Share*		Rate
1st	340	22.31%	2,494	22.12%	0.19%	1.22%	0.61
2nd	331	21.72%	2,507	22.24%	-0.52%	-2.60%	0.63
3rd	312	20.47%	2,313	20.52%	-0.05%	0.42%	0.62
5th	294	19.29%	2,184	19.37%	-0.08%	-1.19%	0.62
6th	247	16.21%	1,775	15.75%	0.46%	2.15%	0.60
Total	1,524	100.00%	11,273	100.00%	0.00%	0.00%	0.62



^{*} Screening and Evaluation Criteria

Combined Quality Workload Analysis

- Regular Army and Army Reserve together
- Brigade Share: Total workload per Brigade. This holistic approach examines total quality mission and total recruiter resources

For chart, A – B = D

A

B



BDE	OPR Authorizations	OPR Share	Quality Mission	Quality Mission Share	OPR Share - Quality Mission Share*	Current Delta	Required Quality Write Rate
1st	1,591	19.78%	10,774	19.12%	0.66%	1.22%	0.56
2nd	1,678	20.86%	12,377	21.96%	-1.10%	-2.60%	0.61
3rd	1,648	20.48%	11,264	19.98%	0.50%	0.42%	0.57
5th	1,676	20.83%	12,154	21.56%	-0.73%	-1.19%	0.60
6th	1,452	18.05%	9,795	17.38%	0.67%	2.15%	0.56
Total	8,045	100.00%	56,364	100.00%	0.00%	0.00%	0.58

^{*} Screening and Evaluation Criteria for RA and AR COAs



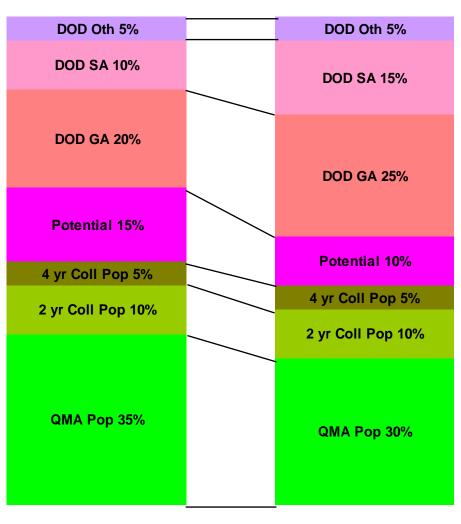
US Army Recruiting Command



Back-up Slides



RA Mission Models (RY05 – RY06)



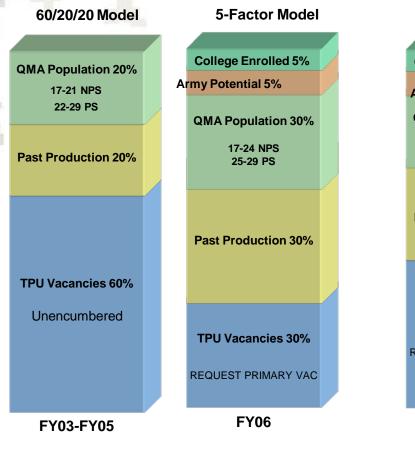
Problems with the RAM model

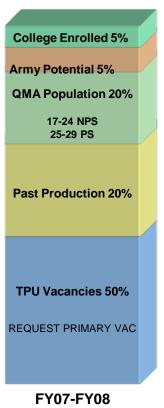
- Not a simple model to understand or justify to the field
- Did not adequately adjust for changes in the Battalion markets
- Often developed Battalion missions that were perceived as "unachievable"
- Was not a good predictor of Battalion performance



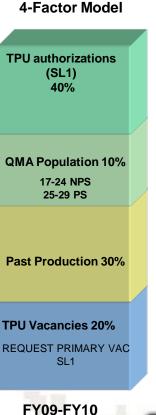
FY05 FY06

USAR Positioning Models





5-Factor Model





28

RA Mission Models (RY07 – RY08)

50% DA (4 Years PP)

50% DoD (4 Years PP)

Past Production Model Advantages

- Provided each battalion a more achievable mission (very big change in proportions)
- Was more predictive of actual performance
- Was simpler to understand and explain
- FY07 also saw the issuance of a "Net Contract Mission" which helped eliminate the "double whammy" effect of redundant FS Loss factors
- FY08 Mission Model was the same, except that the command switched back to issuing a "Gross Contract Mission"

RA Mission Models (RY09)

50% Army
4 Years Past
Production, weighted
40-30-20-10

FY09 Mission Model differs in 2 significant ways from FY07-FY08:

- 1. Replaced DoD past production for Other Services (sum of Navy, Air Force, Marine Corps) past production. This is more responsive to market share realities and does not over-represent Army productivity.
- 2. Years of past production are weighted as follows:
 - Most recent 12 months production: 40%
 - Next most recent 12 months production: 30%
 - 2nd oldest 12 months production: 20%
 - Oldest 12 months production: 10%

End result is a model that is more responsive to recent market shifts.



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Army Research Consortium 1 SEP 09



Continuing Long Term Challenges

- Army has a strong, negative cultural bias against recruiting duty
- Soldiers and Leaders operate in unfamiliar environment requiring training and experiences outside Army expertise
- System reliant on individual efforts vice teams
- Sub-optimal process results in inefficiency
- Fluctuating Soldier requirements, dependent on environment, impacts Army operating strength
- Initial and sustained training ineffective due to wide scope of tasks and lack of dedicated training time
- Multi-component Soldier & Leader efforts not synchronized in an Area of Operations
- No standardized force modernization system in place for recruiting
- Public not provided a single location, real or virtual, for understanding and seeking Total Army opportunities

- Holistically Develop (Local)
- Statistically Test (Regional)
- Deliberately Expand (National)

Develop experimentation & testing framework

Focus on station level reengineering experiments

Integrate proven reengineering efforts

Integrate tests into strategic plan (DOTMLPF)

Revise leadership & management construct

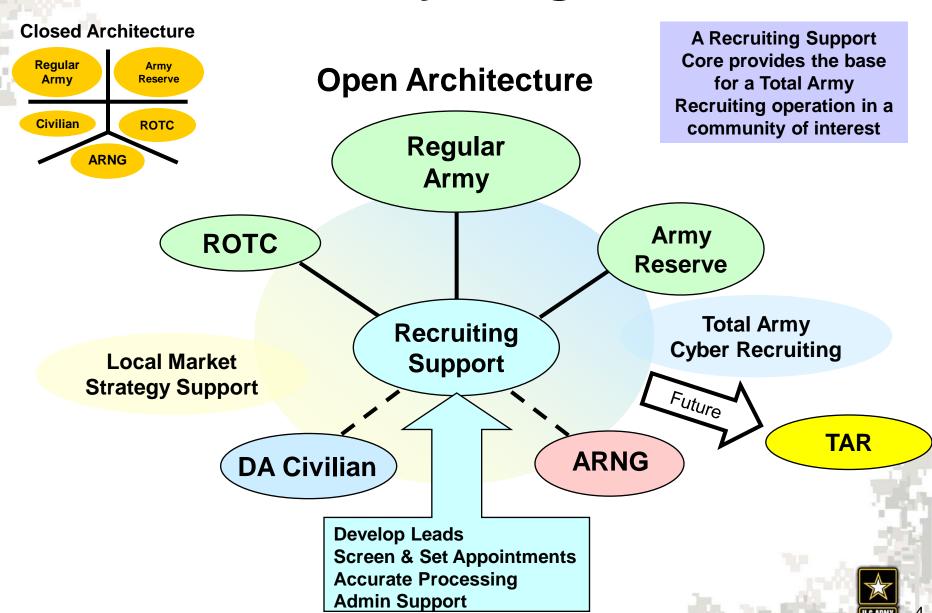


What Pinnacle Does

- Modernizes a recruiting process still operating under the '70's All-Volunteer Force model by adopting industry best practices
- Holistically alters recruiting process not just another option, add-on, or accessory
- Reduces Soldier requirements and optimizes Soldier visibility & interaction with the market
- Integrates multiple recruiting experiments and innovations into single cohesive focus
- Open Architecture allows integration of:
 - Cadet Command recruiting efforts
 - ARNG recruiting efforts
 - DA Civilian recruiting efforts



Total Army Integration

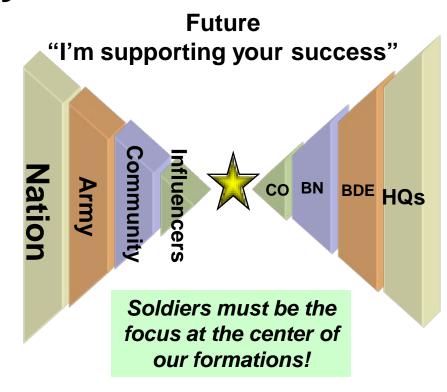


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Recruiting Duty for Soldiers

Current
"I've got my eye on you"





- Current structure & process puts a recruiter at the bottom of the hierarchy
- Weight of the organization borne by individual performance of individual recruiters
- Leaders spend the majority of their time "watching" individuals below them instead of supporting team accomplishments
- Performance often depends on random "meeting" engagements with a market suspicious of their intentions

Must move to planned, deliberate, & rehearsed engagements by Soldiers recognized as Heroes in the community



	Training Level			Experience Level		
	Novice Adept Master			Novice Adept Master		
Prospecting						
• P1 (telephone)						
• P2 (COI/VIP)] :					
P3 (face-to-face)						
P4 (internet)] :					
<u>Interviewing</u>] [
Pre-Qualify Applicant						
Administer CAST, EST] :					
Tell the Army story						
Counsel Applicant] :					
Gain an Army commitment	1:					
Processing	1:					
Transportation, Hotel lodging, Meals	1 :					
• Test ASVAB, AIMS	1 :					
 Special Test if required DLAP, ESL, EPLT, 	1 :					
 Physical, Flight, Consult if required 	4					
Background Check		Level	of			
Police Checks, if required						
Project Applicant	tra	ining	after			
Waiver Processing	: ""	_				
Maintain School Program		RRS	3			
Gather school lists		1111	,			
Develop COI's						
March 2 Success						
MET Sites	1					
SASVAB Proctor						
Follow-up	4 :					
• Lead followup	4 :				K	
Prospect followup	4 :					
Applicant followup	- :					
• FS followup	4 :				ا مىرما	- 4
• COI followup	- :				Level	OI
• VIP followup	-				\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	
Ship FS	-			e	xperie	ence
Project for shipping	4 🚦				after o	200
Confirm required Documents and actions	4 [anei c	ne
Provide transportation to Hotel	4 :				V/0-2	r
Lead generation	4 :				yea	.I
Develop School lists	1 :					
• Referrals	-					
• Walk-ins, and Call-ins	- :					
Hometown Recruiter Assistance Program	- :					
Plan use of HRAP participants Define goals of HRAP participants	1 :					
Manage HRAP Participants	1 :					
Operations management	1 :					
Recruiter Work Station	1 🗓					
Recruiter Operation Plan	1 🖁					
Recruiter Zone Calendar	1 🗄					
Enlistment Records Management	1 :					
Develop Station Accomplishment Plan	1 :					
Manage Applicant Processing List	1 :					
Update GOV Log	1 :					
Update DAT logs	1 :					
Update Stamp Log	1 :					
•Future Soldier Training Program(FSTP)	1 🗓					
Training new FS's in BCT common tasks	1					
Administer the APFT	1 :					



Current Construct





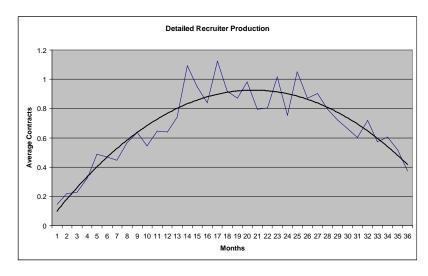












- Trained in all tasks resulting in broad spectrum of skills with a low level of expertise
- Responsible for all recruiting tasks resulting in a broad range of experience but low level of expertise
- Overall results are a long, slow learning curve that fails to maximize productivity of uniformed personnel



Critical Soldier Tasks in Recruiting

Division of Labor
Specialization
Of Skills

- Tell the Army story
- Counsel Applicant gain a commitment
- Develop COIs
- Lead FSs / HRAPs

Prospecting

- School visits
- All events career fairs, PaYS etc
- Home visit
- COI maintenance & development
- Market maintenance & development





Army Interview

- Tell Army Story
- Gain commitment
- Verifying qualification
- Influencer marketing
- Counseling
- Temporary contract
- Team introduction

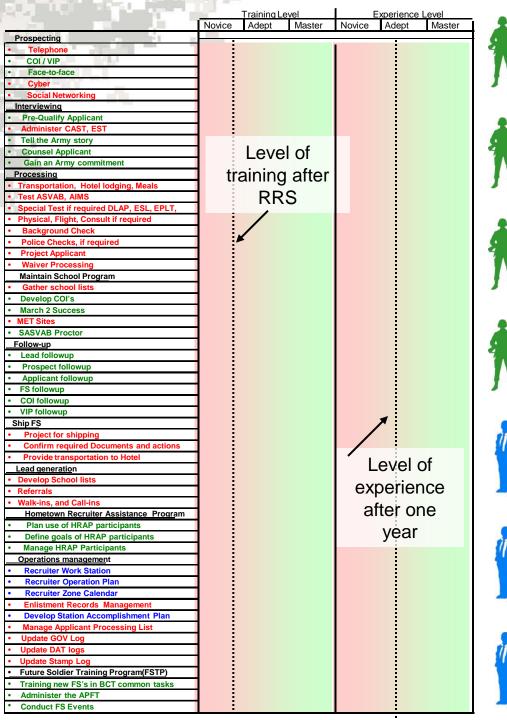
- Face-to-face engagements
- Lead and establish Army presence
- Ensure applicant suitability for "our" Army

FS Training

- FS Orientation/Training
- Physical Training / PFA
- Identify HRAP
- Event participation

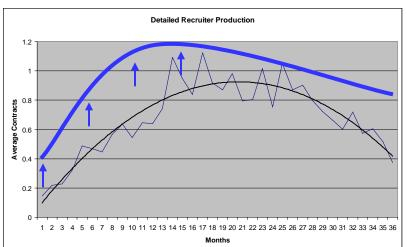






Future Construct





- Division of labor and specialization of skills improves level of training resulting in deeper ability in most critical skill sets
- Focusing on smaller range of tasks equates to more experience gained in a faster manner
- Overall results are a more rapid learning curve that maximizes productivity of uniformed personnel

Soldiers focus on Training & Experience in Face-to-**Face Communications**

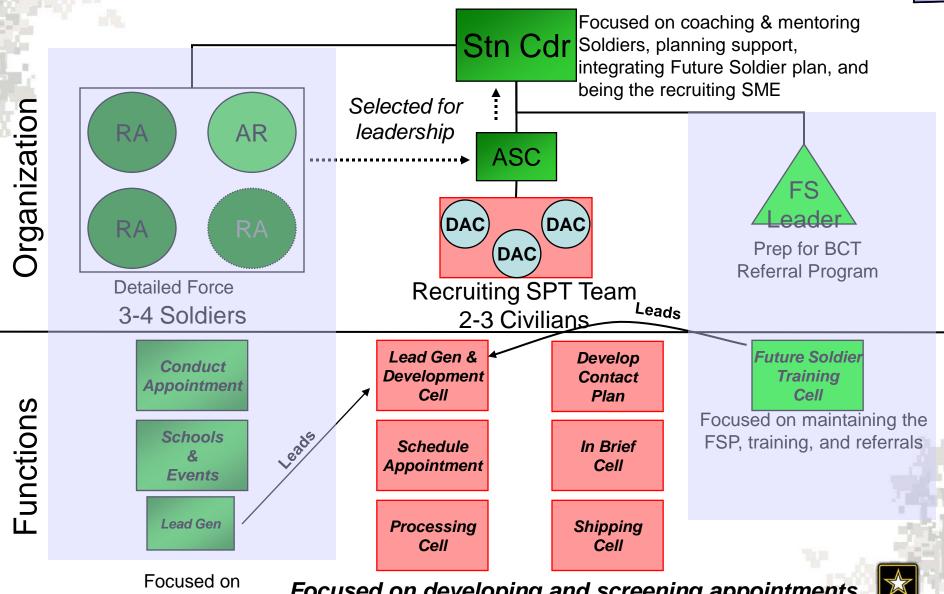




Recruiting Support Team Role



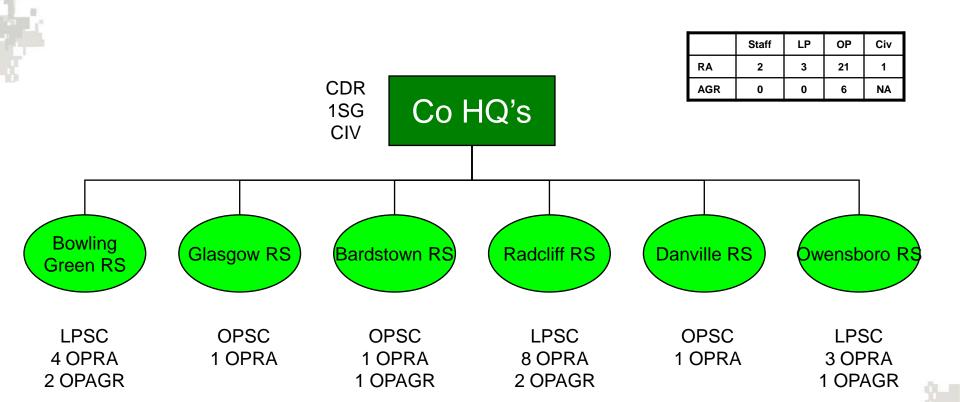
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Face-to-Face

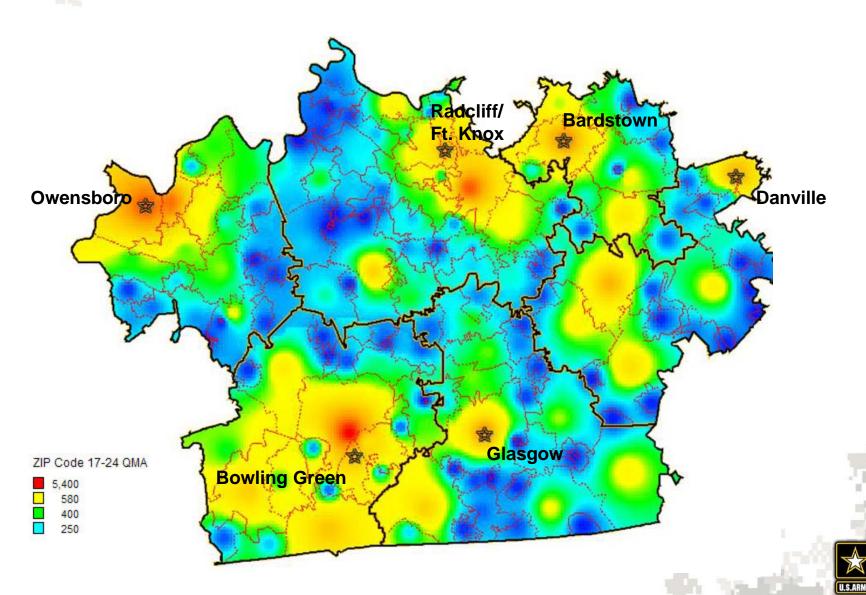
Focused on developing and screening appointments, customer relations, and accurate processing

Radcliff Recruiting Company Current



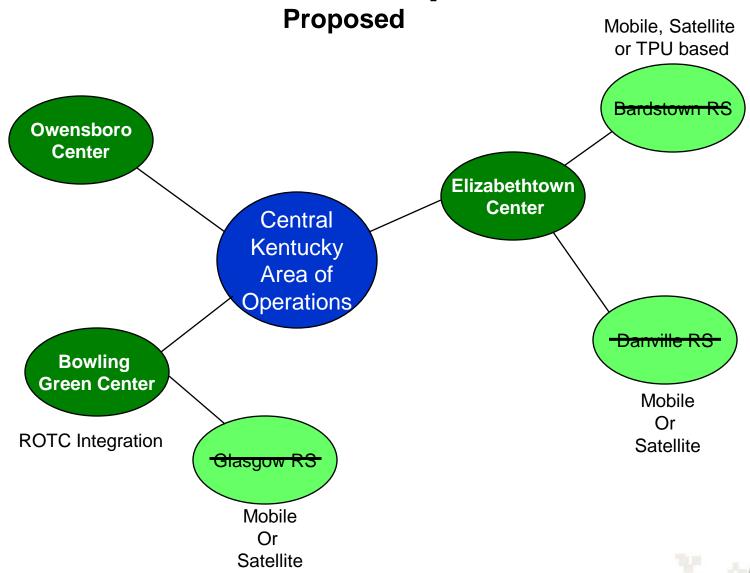
Radcliff Recruiting Company

Nashville Battalion



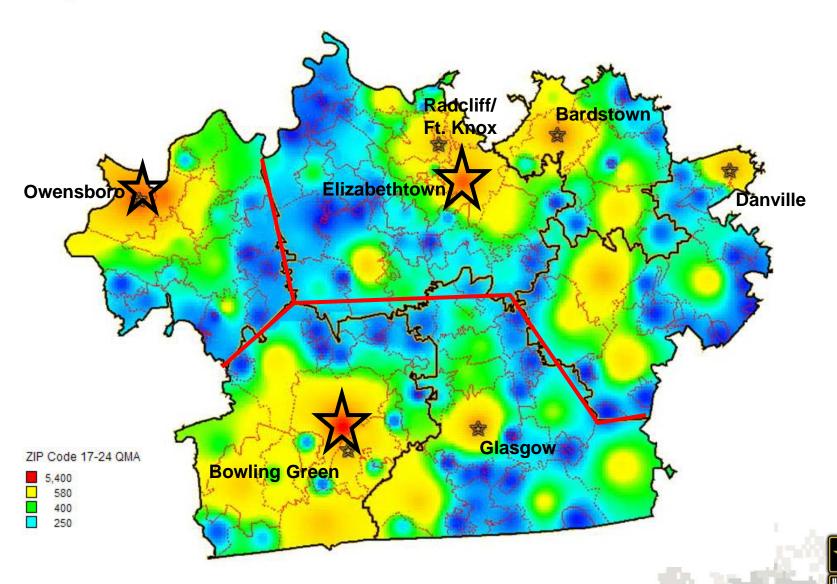
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Radcliff Area of Operations



Radcliff Area of Operations

Nashville Battalion



Way Ahead

- Radcliff Recruiting Company IOC 22 SEP 09
- Developing Concept Plan for Civilian Authorizations and Funding
- Planning 4 additional companies and one BN IOC in FY10 with Military Manpower
- Continue data collection and analysis to evaluate Pinnacle concept
- Endstate: Entire command transformed by 1st QTR, FY15





Pinnacle Metrics

Soldiers and Resources Used to Recruit

- Number of Soldiers returned to the Operational Army (Data)
- Mileage driven (Data)
- 3. Facility costs (Data)
- 4. Cost per Contract (Data)

Quality of Life

- Job satisfaction (Survey)
- 2. Work hours per week (Survey)
- Membership in local community activities (Survey)
- Self assessment of amount of family time (Survey)
- 5. Number of voluntary conversions to 79R PMOS (Data)
- 6. Civilian turnover rate (Data)
- 7. Amount of station commander update time and sustainment training required (Data)
- 8. Recruiter assessment of access to services (e.g. gym, medical, child care) (Survey)
- 9. Recruiters in remote locations (Data)
- 10. Leadership Opportunities Available (Data)

Skill Specialization

- Soldier task reduction (Survey/Soldier Calendar)
- Assessment of seamless processing (Survey/Lean Six Sigma)
- 3. Soldiers' perception of support (Survey)
- 4. Number of errors in packet processing (Data/Lean Six Sigma)
- 5. Processing time (Data)

Maximize Face Time and Maintain Recruiter Performance

- 1. Time spent face to face with public (Survey)
- 2. Amount of time spent in non-value added tasks (Survey)
- 3. Volume production (Data)
- 4. Quality recruits (Data)
- 5. Future Soldier loss rate (Data)
- 6. Market Share (Data)
- 7. Market Segmentation (Data)



Major Pinnacle Changes

Present

- Individual based, Soldier only process
- Extremely large number of Soldiers
- Some online applications
- Small stations servicing outlying communities
- Strip mall "offices" off the beaten path
- Bulkier, mid-tech equipment
- Dated table & banner event displays
- Nationally focused marketing with some local customization
- Non-professional, repetitive, local market event planning

Future

- Team based, Soldier/Civilian integrated process
- Balanced Soldier-Civilian workforce
- Expanded Cyber-recruiting with interactive application system
- Larger central opportunity centers with mobile/TPU/ARNG satellites
- High-traffic, easily accessible locations
- High-tech, highly mobile equipment
- High-end interactive event displays
- Nationally branded, locally focused customizable marketing
- Professionally developed, locally relevant, market planning

Major Pinnacle Changes (continued)

Present

- Soldier heavy leads refinement process
- Quantity & Quality mission on back of individual Soldiers
- Server based, VPN accessed, nonintegrated IT solutions
- Lack of integration with ROTC recruiting and local TPU support
- Redundant trips to MEPS
- Lack of well-defined, Army aligned
 Officer/NCO responsibilities
- Broad skill, unfocused, nondedicated training
- RA or AR enlisted focus mindset

Future

- Centralized leads refinement focusing on qualified appointments
- Split of mission between teams allowing Soldiers to focus on quality
- Internet based, single sign-on, directly accessed, integrated IT
- Full integration of ROTC and local TPU's
- Single trip to MEPS
- Well-defined, Army aligned Officer/NCO responsibilities
- Specific skill focused dedicated training
- Fully integrated enlisted, officer, and civilian opportunities

Benefits to Total Army

Reduces:

- Soldier Footprint substitutes civilian manpower and returns Soldiers
- Facility Footprint trades "brick & mortar" for mobile and virtual
- Mobile IT Footprint reduces equipment & PII losses
- Equipment Footprint requires less vehicles, cell phones, & laptops

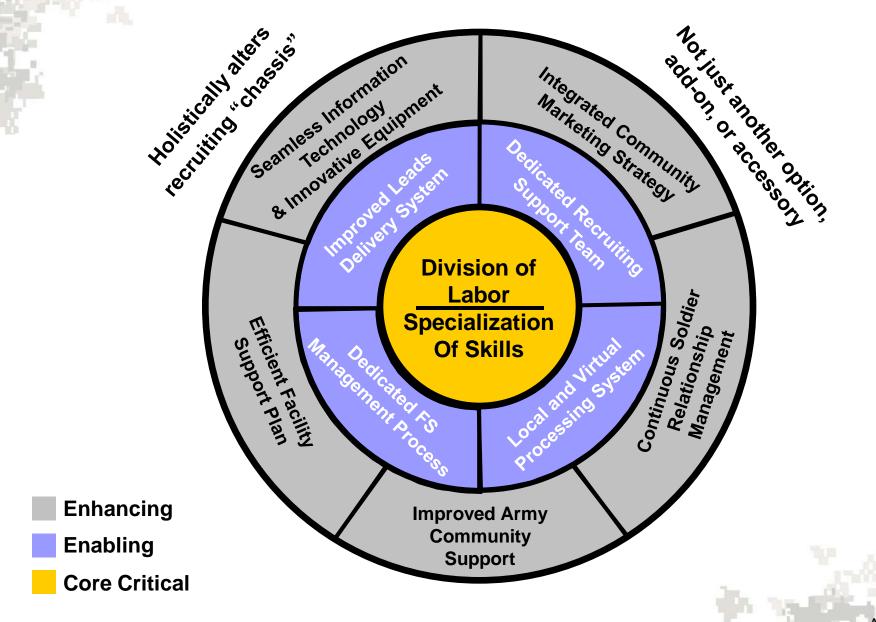
Optimizes:

- Marketing professionally developed & locally relevant
- Visibility Soldiers spend more time "face to face"
- Efficiency improved process results in higher ROI
- Provides a team structure and effort with a better QOL
- Elevates Recruiters to "Hometown Heroes" improving Army's relationship with America
- Focuses effort on investment in Future Soldier to reduce spoilage
- Closes the recruit to veteran loop to ensure "Once a Soldier, Always a Soldier"

All-Component integration for officer, enlisted, & civilian recruiting



How Pinnacle Works





Total Army Community-Based Process Event Plans **Prospecting** Planning & Grassroots Scheduling Team Community Advisory Marketing Team **Prospects** Total Army Team (RA/AR/ARNG/ Officer/Enlisted/ **Engagements** Cyber **Opportunity Counselors Units/Veterans)** Recruiting (Army Ambassadors) **Optimize** Veteran Soldier Retiree Face-to-**Families** Face time **Applicant Future** Soldier Soldier Processing Shipping Future Soldier Training ARMY STRONG."

Streamlining the Recruiting Process

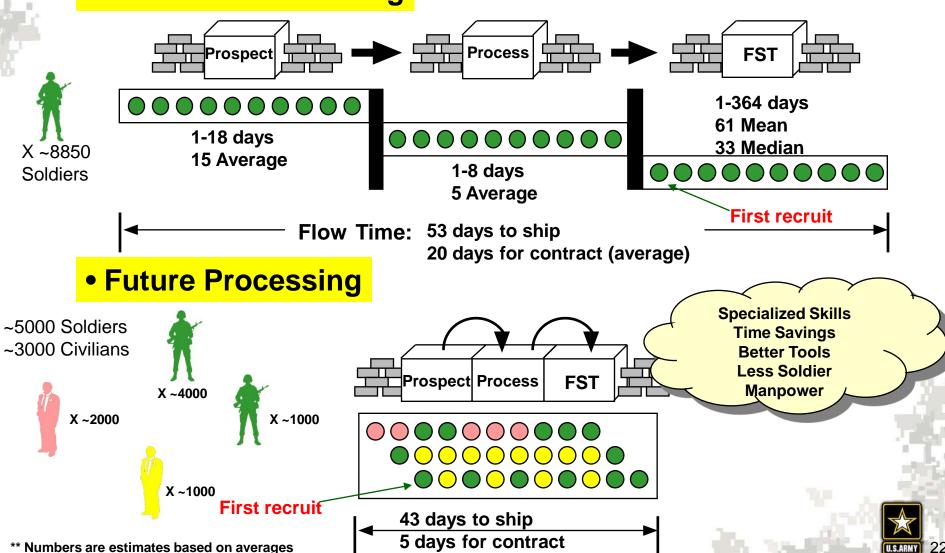
Division of Labor Specialization Of Skills

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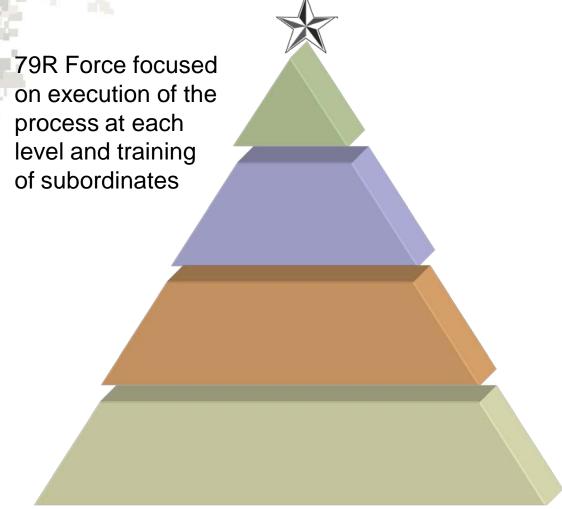
(Division of Labor/Specialization of Skills/Substitution of Civilian for Military Manpower)

Historical Processing

Detailed distribution analysis & simulation required



Supporting Recruiting at each Level



Entire organization's focus must shift to enabling our Recruiter's ability to have successful face to face contact in an Army positive environment

Recruiter

Focused at individuals, high schools, 2 & 4 year colleges, and local events

Company Commander

Focused on priority school events, community partners, and centers of influence

Battalion Commander

Focused on major events, centers of influence, development of partners in recruiting

Brigade Commander

Focused on regional marketing, state leaders, and major partners



Improved Leads Delivery System (Providing Qualified Prospects)





Development Center
Large Volume
Simple Screening
INTERESTED

Leads Refinement

Refinement Center
Medium Volume
Validate Interest
Refined Screening
QUALIFIED

Internet, Mail, 1-800, Regional Events, Lists

> Local Engagements

> > Face to Face

Schedule Appointments Recruiting Support
Small Volume
Detailed Screening

APPOINTMENT

<u>Soldiers</u>

Contract Small Volume
Conduct Appointment
Gain Referrals
COMMITMENT

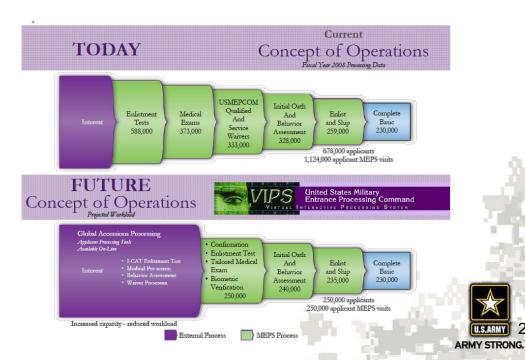


Local and Virtual Processing System

Lecal and Mittels State of Proceedings State of State of

- Leverage process improvements
 - Hometown shipping
 - Livescan

- Eliminate 2nd trip to MEPS by FY12
- Eliminate MEPS brick & mortar by FY15
- Local swear-in leveraging military community
- Enhanced cyber recruiting Army Career Explorer (ACE) expansion (ACE records have increased from 2,300 in FY07 to over 5,500 FY09 YTD)
- Leverage MEPCOM Virtual Interactive Processing System (VIPS)
 - Streamlined data transfers
 - Online enlistment testing
 - Local physicals
 - Waiver pre-screens
 - Behavior assessment





Efficient Facility Support Plan



PINNACLE

- Reduce total "brick & mortar" footprint from 1,600+ to ~1,000
- Larger Opportunity Centers vice small business offices
- Mobile offices cover outlying smaller communities on a cyclical schedule
- Maximize use of cyber recruiting capability for hot hand-off to recruiters reducing prospecting / travel requirements



Roughly 80% of all production comes from 60% of stations located in and around the 1,000 largest cities in the US





Information Technology



Business process changes will continue to drive reductions in IT requirements

Hardware

- Recruiters moved to palm-based convergent devices instead of laptop computers
- Highly mobile presentation & office equipment supplements Recruiter kit bag
- Provides a higher tech, polished image to the market

Software

- Internet based software solutions provide access to >90% of the force
- NetCentric Army.mil based cloud computing software solutions
- Adapt COTS solutions from the cloud where possible
- Integrate with AKO for email, file sharing, and community software

Infrastructure

- Reduces requirements for servers & infrastructure
- Reduces manpower moving from internally developed software to industry adapted solutions
- Reduces requirement for managing software licenses and associated support costs

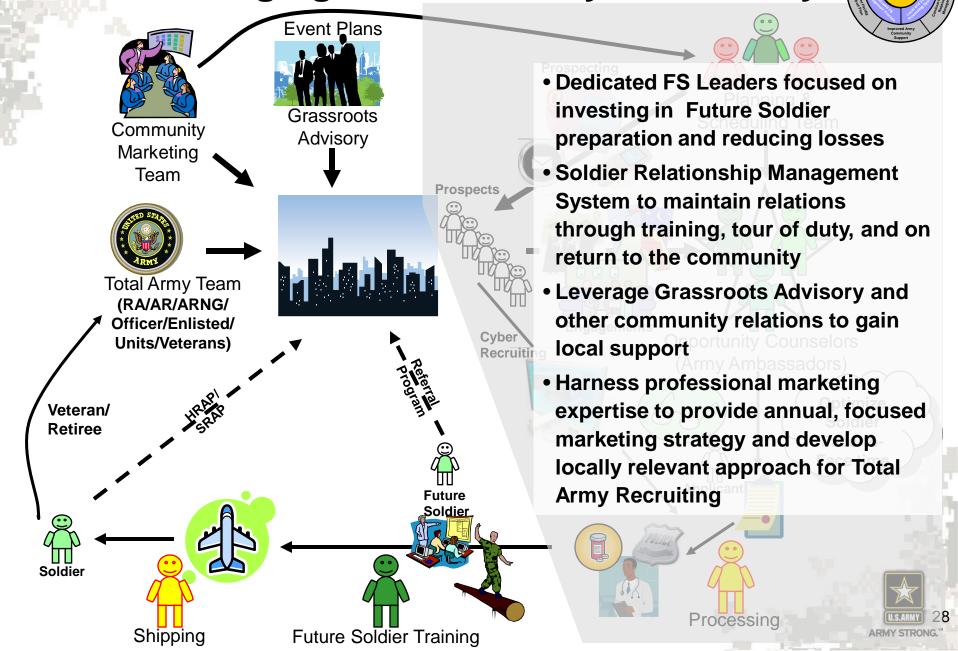








Leveraging the Total Army Community



Military Reduction / Civilian Growth

Standard Center Model

1 Center CDR 79R SFC

1 Asst. CDR (80%) 79R SSG

3 RA Recruiters Detailed

1 AR Recruiter

Detailed

1 FS Leader Detailed

3 Rec. SPT Team DA Civilian

1,000 Army
Opportunity
Centers

79R Station Level Restructure

782 Stn. CDRs 1,251 Recruiters

Current

1,000 Center CDRs 800 Asst. Center CDRs No 79R "Recruiters"

Future



- Maintains a balance in Military Downsizing and Civilian Growth
- Aligns with DA Recruiter Reduction goals
- Reduces fluctuations in Soldier Requirements
- Resizes the 79R Force reducing approximately 230 positions



1st Order Positive Effects of Pinnacle

- Better work hours and quality of life for Soldiers
- More desirable duty assignment for Soldiers as the Army's Ambassador to the community
- Improved effectiveness of individual work efforts due to increased training and repetitive use of skills
- Ability to shorten the recruiting cycle due to focus on cell activities
- Ability to design better tools due to more knowledgeable skilled users
- Reduces chance of unethical choices due to split of quantity vice quality decision – better use of teams
- Reduced number of Soldiers required to perform recruiting duty enabling ability to select vice screen
- Sustained community relationships due to longer term civilian presence
- Soldier face-to-face encounters are structured engagements vice movement-to-contact prospecting
- Reduced recruiting time and effort due to applicant ability to self-process
- Reduced costs and time to process due to less/no time spent at MEPS
- Less risk of equipment or personal information loss
- Reduced Future Soldier losses
- Reduction in ethical misconduct and Soldier Investigations



Benefit-Cost Analysis (Estimates)



Long Term Savings (per year @FOC)

- Facilities (20-25% reduction)\$20-25 Million
- Vehicles (30-40% reduction)\$5-7 Million
- Applicant Travel & Lodging (90% reduction)\$22.5 Million
- ARC Training\$7-10.5 Million
- Recruiter Expenses\$13-20 Million
- Info. Technology
 \$ Undefined, but likely significant (10-20% of total IT budget)

Intangible Benefits

- Changes recruiting culture for Total Army
- Returns Soldiers to the Operational Force
- Improves Quality of Life
- Reinvents recruiting & 79R force structure
- Teams... Not Individuals

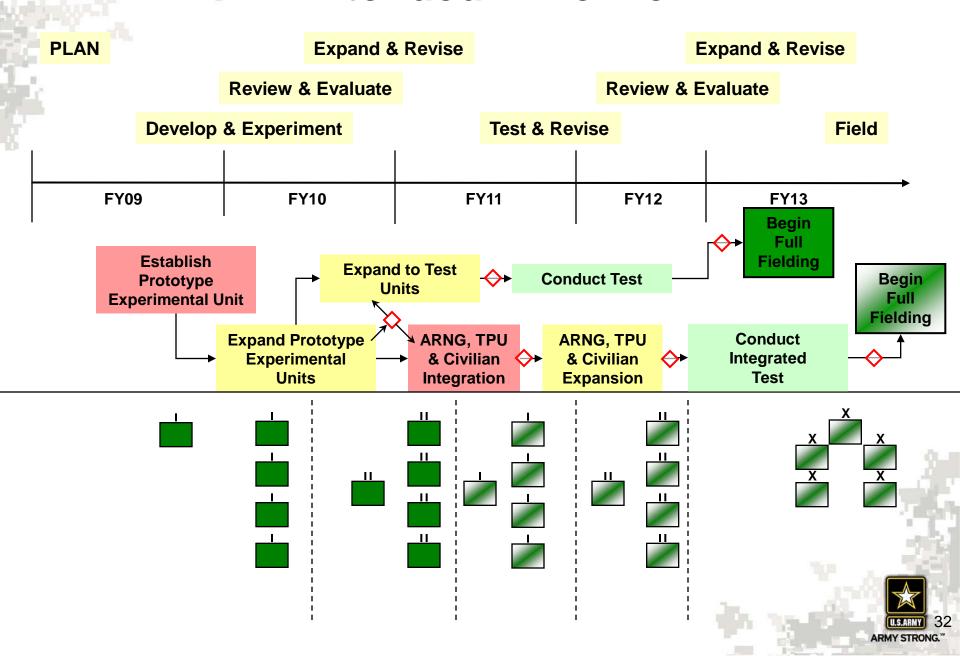
 Short Term Investment

	FY09	FY10	FY11	FY12							
Core	\$120K	\$3.4M	\$5.9M	\$18.8 M							
Enabling	\$200K	\$0.9M	\$2.0M	\$4.0M							
Enhancing *	\$168K	\$1.1M	\$1.7M	\$5.5M							
Total	\$488K	\$5.4M	\$9.6M	\$28.3M							
Pinnacle Structure	1 Company	5 Companies	2 Battalions	5 Battalions							

^{*} Facility costs removed as they are a projected realignment of current facility projected costs



Extended Timeline



What We Need from Accessions Command

- Support the plan and gain Senior Leader approval & stakeholder buy-in (DA level G3, G1, ABO, G6)
- Work Army Recruiting Initiative \$\$ with higher
- Coordinate with ARNG & DA G1 (Civilian) to gain cooperation & support
- Champion change in facility rules & regulations with OSD Joint Facilities Program
- Refine leads process front-end to reduce garbage in-garbage out
- Lead re-evaluation of data requirements for enlistment packets with DA G-1
- Continued support from USAAC G2 for analysis, simulation, and metrics
- USAAC G6 align needs with current funding and pending changes to architecture (AKO)

PINNACLE

- Major campaign to leverage ACE including marketing and IT support
- Focus from USAAC G7/Ad Agency on providing local, professional marketing strategy support

 U.S. ARMY RECRUITING



US Army Recruiting Command

Tactical Segmentation – a practical application



Accessions Research Consortium

Mitch Stokan, USAREC G-2
1 Sep 2009





Targeting Assess Market Set & achieve **Must Keep Must Win** objective (Sustain/Exploit success) (Create success) **Schools Target** Geographical Area **Events/COIs/etc.** (HS & Colleges) **Customize message** Marketing **Allocate resources**

ARMY STRONG.

Low - High

Market of opportunity: Small potential. Maintain awareness, consider resourcing (create success) after Must Win.

Low - Low

Supplemental: Not a significant market, not a resource priority. Maintain awareness.

High - High

Large Population

Avg Segment Penetration

Better than benchmark penetration

Must Keep: Doing well, sustain or exploit. Potential being achieved.

Avg Segment Population Proportion

High - Low

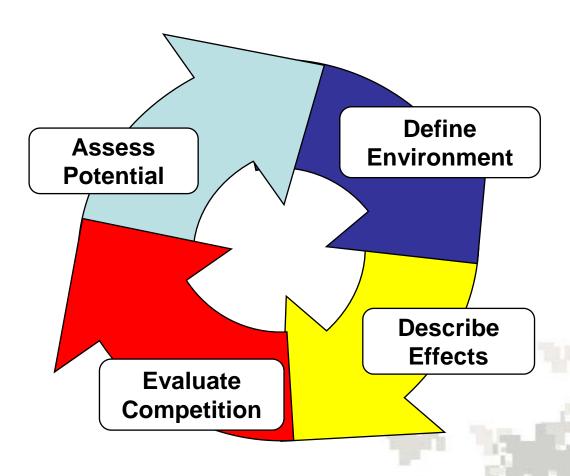
- Large Population
- Lower than benchmark penetration

Must Win: Under represented – Potential exists. Create success. Resource priority.



IPE: Assess Market Potential

Determine who is being recruited versus who is available to be recruited while considering competitive influences





Assess Market Potential (Segment Index)

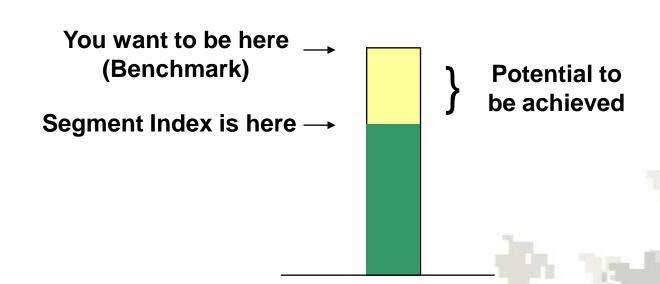
- a. For each category,
 - Crosswalk segment production with representation to calculate the Segment Index:

Segment Index =
$$\frac{\text{Production by Segment}}{\text{Population by Segment}}$$



Assess Market Potential (cont) (Benchmark Index)

- b. For each category,
 - Determine a Benchmark Index:
 - establishes a reasonable goal to achieve
 - based on historical production in similar markets
 - Other USAREC organizations or competitors
 - steady state, substantiated over time





Assess Market Potential (cont) (Calculate Potential)

- c. For each category,
 - Determine potential for each segment by comparison with a benchmark index:
 - Segment Index < benchmark : Where can we improve (under-represented)
 - Segment Index > benchmark: Where can we exploit (over-represented)
- d. Determine beneficial markets by aggregating potential across categories
 - Determine dominant segments
 - Look for commonality for messaging across segments



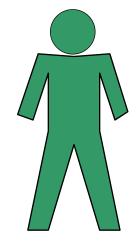
Segmentation & Messaging



Exposure & Awareness

Segments

- Demographic
- Lifestyle
- Psychographic



Attributes

Customized message

Resonate with a specific attribute of the prospect



G-2 Web Q: Tactical Segment Report

	<u>PD</u>	<u>TS</u>	TS SEQ#	<u>%TS</u>	<u>%TS R</u>	% PRD	% PRD R	AF(
	200903	20 27	1	₹8.85	8.85	\9.38		
	200903	<u>27</u>	2	7.67	16.52	3.31		
	200903	/ <u>35</u>	3	7.44	23.96	8.28		
	200903/	37	4	5.54	29.49	1\93		
	200903	24	5	4.23	33.72	2.62		
	200908	36	6	4.21	37.93	2.90		
	200903	23	7	4\02	41.96	5.52		
	200903	18	8	3 84	45.79	1.79	\	
	200903	11	9	3.58	49.38	.55		
	200903	03	10	3.38	52.75	3.59		
	200903	NULL				26.21		
	200903	20	1	8.85	8.85	9.38	9.38	
	200903	35	3	7.44	16.29	8.28	17.66	
	200903	23	7	4.02	20.31	5.52	23.17	
	200903	25	21	1.71	22.02	4.00	27.17	
	200903	03	10	3.38	25.39	3,59	30.76	
7	200903	04	26	1.57	26.96	3.59	34.34	
	200903	27	2	7.67	34.63	3.31	37.66	
	200903	36	6	4.21	38.84	2.90	40 SS	
	200903	24	5	4.23	43.07		% PRD:	0/5
							/U I I\D.	/0
					1			

TS – Tactical Segment 1-39

%TS – Percentage of that TS in the specified RSID



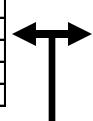
Segmentation Analysis Market Assessment (SAMA) - Purpose

- Provide a standard methodology for Battalions, Companies and Stations to <u>Identify</u>, <u>Prioritize</u> and <u>Target</u> the various markets within their areas.
- Customize messaging to integrate advertising and prospecting efforts
- Optimize resource allocation and recruiting focus.



SAMA Calculations

	Station											
TS	Population	Contracts	Penetration									
1			Contracts/Pop									
2												
39												



		Company										
	TS	Population	Contracts	Penetration								
•	1			Contracts/Pop								
	2											
	39											

 $PotentialPenRate_{TS} = Max \left(PenRate_{RS}, PenRate_{RTC} \right)$

	ZIP 1										
TS	Potential Pen Rate	E (V)									
1											
2											
39											
	T	S Potential	Σ								
Uncoded											
	Army Volume Potential										

 $TotalArmyVolPot_{ZIP} = TSPotential_{ZIP} + 4YrAvgNotCoded_{ZIP}$

ZIP Code Types and Strategies

	Total DoD Potential		Army Share Of Potential
Must Keep	>= 12	AND	>= 50%
Must Win	>= 12	AND	< 50%
Market of Opportunity	4 >= Total DoD Potential <12	-	-
Supplemental	< 4	-	-

- Must Keep to keep you must achieve the Army's Share of the Total DoD Potential.
- Must Win to win you must achieve 50% Share of the Total DoD Potential.
- Markets of Opportunity & Supplemental: to sustain you must achieve the Army's Share of the Total DoD Potential.



Must KEEP Zip Code - Market Production Assessment

Note: Target Production Remaining having a Negative Value indicates that the Army Potential Production for that ZIp Code has been exceeded.



Pct Y	TD Rctg Days: 41.02%		Total DoD Potential Data						YTD Market Share Data					Targeted Production				
									A	s Of RCM	: DI	С		Arı	ny Prod As	s Of: 12-	Feb-08	
RSID	NAME ZIP CODE	TS TOTAL	NOT CODED	ARMY VOL POT	(-)	TOT DoD POT	ARMY SHARE OF POT	CAT	AR	AF	MC	NA	DoD	Army Tgt Prod	Tgt Prod Achv	% Tgt Prod Achv	Tgt Prod Remaining	% of Lead Line
1A1D	ALBANY																	
	12205	4	5.5	10	10	20	50.62%	7/-1	2	0	2	1	5	10	2	20.01%	8	48.78%
								Vol	40.00%	0.00%	40.00%	20.00%		1				
								GA	0	0	0	0	0]				
								GA	0.00%	0.00%	0.00%	0.00%						
								SA	1	0	1	0	2					
									50.00%	0.00%	50.00%	0.00%						
	12203	17	1	18	5	23	79.23%		2	2	3	0	7	18	4	22.07%	14	53.81%
								Vol	28.57%	28.57%	42.86%	0.00%		1				
									2	1	2	0	5	1				
								GA	40.00%	20.00%	40.00%	0.00%		1				
								SA	0	1	0	0	1]				
								- JA	0.00%	100.00%	0.00%	0.00%						
1A1D	ALBANY	22	7	28	15	43	64.93%		4	2	5	1	12	28	6	21.34%	22	52.02%
	(2 ZIp Codes)							Vol	33.33%	16.67%	41.67%	8.33%						
	(2 Zip Coucs)								2	1	2	0	5	1				
								GA	40.00%	20.00%	40.00%	0.00%		1				
								SA	1	1	1	0	3]				
								JA	33.33%	33.33%	33.33%	0.00%						
			_									_		1	_			
Total	(2.7lp Codes)	22	7	28	15	43	65.98%	Vol	4	2	5	1	12	28	6	21.34%	22	52.02%
	(2 Zlp Codes)								33.33%	16.67%	41.67%	8.33%	-	ļ				
								GA	2	1 20.00%	2		5					
									40.00%	20.00%	40.00%	0.00%	3	-				
								SA	33.33%	33.33%	33.33%	0.00%	3	1				
									33.33%	33.33%	33.33%	0.00%		J				

Wednesday, July 02, 2008 Page 1 of 1

SAMA – Tactical Segmentation Report



Tactical Segmentation Market Report

Recruiting Year 2009

As Of: 22-Apr-2009

1G - USA RCTG BN NEW YORK CTY

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Tactical Segment	Strategic Segment	Ts Population	Ts Population Percent	YTD Production	YTD Production Percent	Current Index	YTD Production Previous Yr		YTD Production Previous Yr Index	Average Production 4 Yr	Average Production 4 Yr Percent	Average Production 4 Yr Index
01	01	22,405.97	1.59%	6	0.98%	0.62	3	0.45%	0.28	4	0.51%	0.32
02	01	12,041.91	0.86%	2	0.33%	0.38	0	0.00%	0.00	0	0.00%	0.00
03	02	5,216.45	0.37%	4	0.66%	1.77	1	0.15%	0.40	0.25	0.03%	0.09
04	02	8,394.91	0.60%	0	0.00%	0.00	0	0.00%	0.00	0	0.00%	0.00
05	02	52,047.79	3.70%	0	0.00%	0.00	0	0.00%	0.00	0	0.00%	0.00
06	02	11,949.09	0.85%	1	0.16%	0.19	0	0.00%	0.00	0	0.00%	0.00
07	02	69,246.42	4.92%	8	1.31%	0.27	0	0.00%	0.00	1	0.13%	0.03
08	03	100,325.01	7.13%	0	0.00%	0.00	0	0.00%	0.00	0	0.00%	0.00
09	03	6,516.64	0.46%	3	0.49%	1.06	2	0.30%	0.65	1.75	0.22%	0.49
10	03	3,314.97	0.24%	0	0.00%	0.00	0	0.00%	0.00	0	0.00%	0.00
11	03	179,607.08	12.77%	0	0.00%	0.00	0	0.00%	0.00	0	0.00%	0.00
12	03	33,872.15	2.41%	17	2.79%	1.16	4	0.60%	0.25	5	0.64%	0.27
13	03	20,656.79	1.47%	2	0.33%	0.22	1	0.15%	0.10	1.75	0.22%	0.15
14	04	2,323.93	0.17%	4	0.66%	3.97	0	0.00%	0.00	0.25	0.03%	0.19



Army Custom Segments

USAAC G2/Center for Accessions Research

As of: 3/30/07

Army Custom Segments

TACTICAL SEGMENTS
MARKETING GUIDE

Send

- the right message
- in the right medium
- to the right target
- at the **right time**.





Backup



Why Segment?

- Select target markets
- Prioritize marketing dollars
- Help determine future opportunities (Mkt Expansion, Opportunity, Exploitation)
- Help understand target market wants and needs
- Make marketing communications more efficient and effective



Market Intelligence in Recruiting Synchronizing Efforts through Segmentation

National

- Generate Awareness
- Increase Interest
- Generate Leads

LEADS

Develop & Refine Leads

Priority Model LRC Super Leads

Local

- Communicate the Army Message
- Develop Community Relations
 - Develop COIs & Partners

Events, Partnerships, COIs, PR

Strategic Segments

- Provide face-to-face interaction
- Create a positive experience •Generate Leads
 - Segmentation ensures marketing communicates the right message through the right medium at the right target



Brigade

- Plan Recruiting Ops
- ID Priority of Effort
- Develop Marketing Plans

Battalion

- Plan Recruiting Ops
- ID Must Win/Must Keep ZIPs & Schools
- Develop Local Events

Station

Develop Detailed Prospecting Plans

Tactical Segments

- Execute Local Events
 - Gather HS Lists
 - Generate Leads

Segmentation ensures recruiters knock on the right door, call the right number, and send the right email



Snapshot: ACS Tactical Segment 1

Hispanic 16-20 HS and early college students from mid to low economic status.

Top Motivators

- 1-Develop leadership skills
- 2-Improve self and develop potential
- 3-Immediate financial benefit.

Top Barriers

- 1-Personal relationships would suffer
- 2-Inability to change plans once enlisted
- 3-Don't want to fight for cause I might not support

Summary: Likely, many of these potential recruits will seek out the Army, and require very little direct marketing. Obviously, the theme for messaging should focus on patriotism and personal development. The key will be to not waste too much effort on these individuals, as you will be to some degree "preaching to the choir."



Targeting

Simply stated...

Targeting is the process of selecting targets and matching the appropriate response to them, in some priority order, considering operational requirements and available capabilities.

The D3A methodology facilitates the attack of the right target at the right time with the most appropriate asset!



USAREC D3A Process

- <u>Detect</u> markets with high potential (method TBD), where the opportunity exists for Army to seize market share and increase production
- <u>Decide</u> from the list of available assets, which are the most appropriate to accomplish the mission IAW Commander's intent and when they should be employed
- <u>Deliver</u> the right assets, at the right time, in coordination with the Brigade's plan...in order to maximize effects in support of mission accomplishment
- <u>Assess</u> the effectiveness of the attack and any remaining potential for future yield in the same market

Target Board Purpose

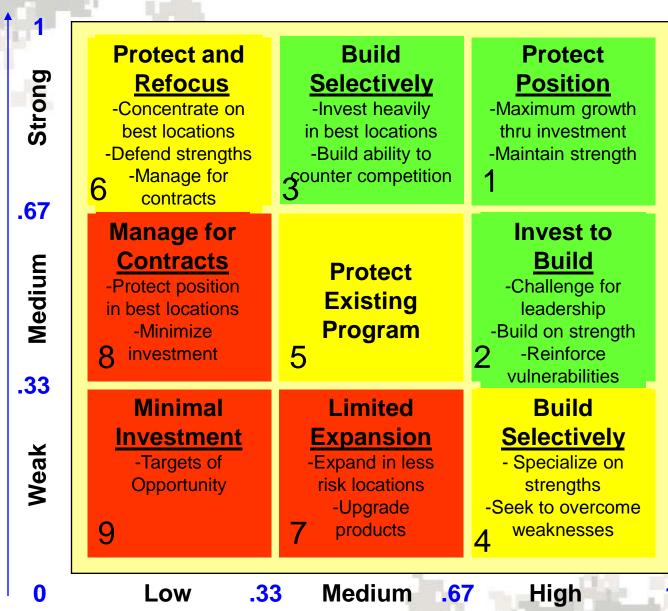
- Conduct Target Board to determine:
 - what opportunities exist
 - when and what resources/assets can be leveraged to best capture their markets.
- Provide a staff estimate and recommendations to CG to facilitate resource decisions



Target Board Intent

- The Target Board will synchronize the CG's desired effects based on intent:
 - Reinforce success
 - Try to make up ground in losing markets
 - identifies emerging markets to create success in new areas



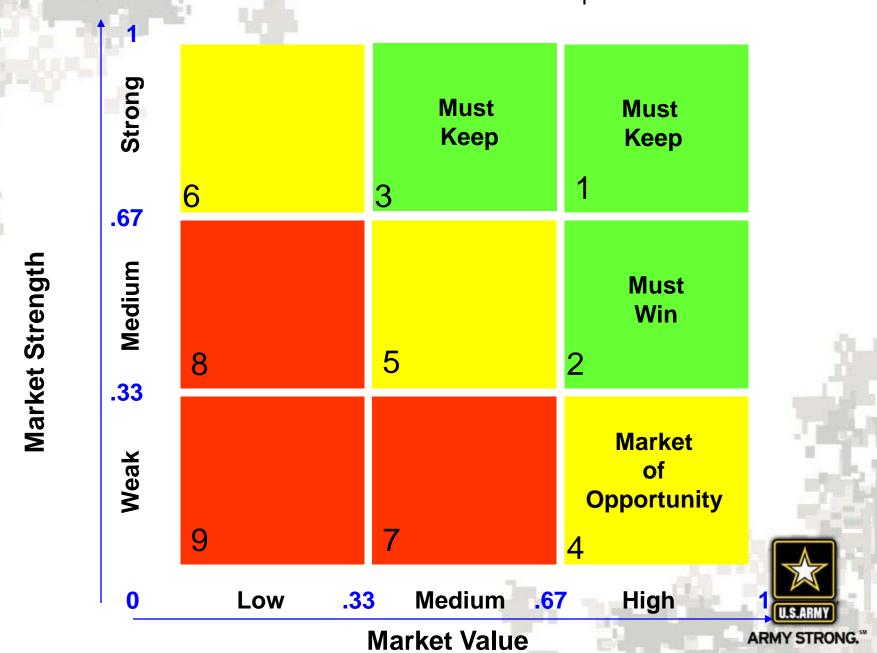


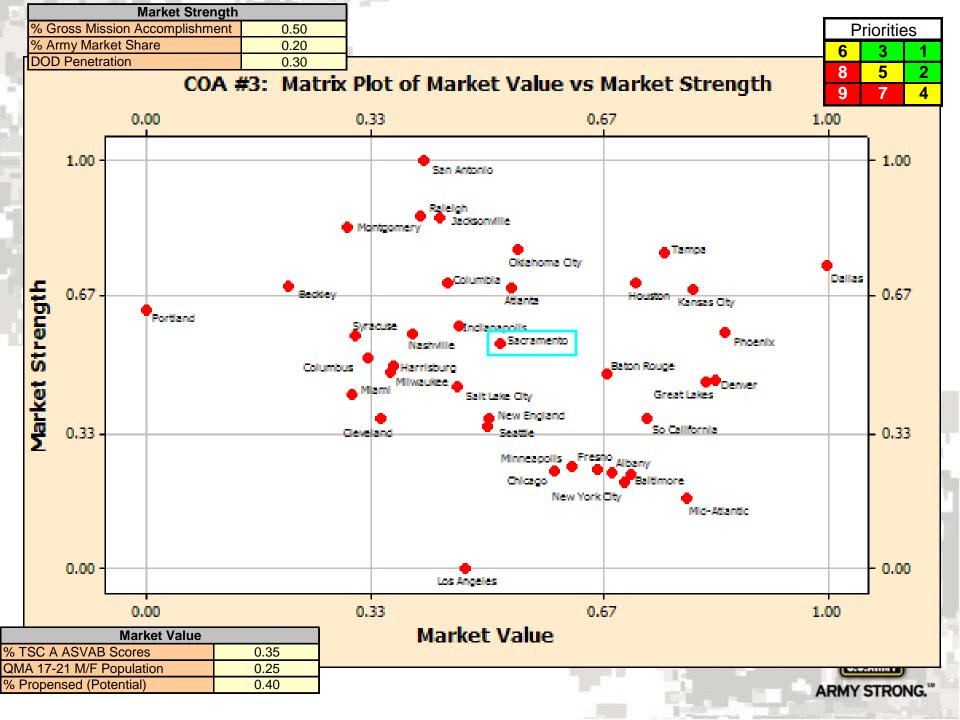
Market Strength

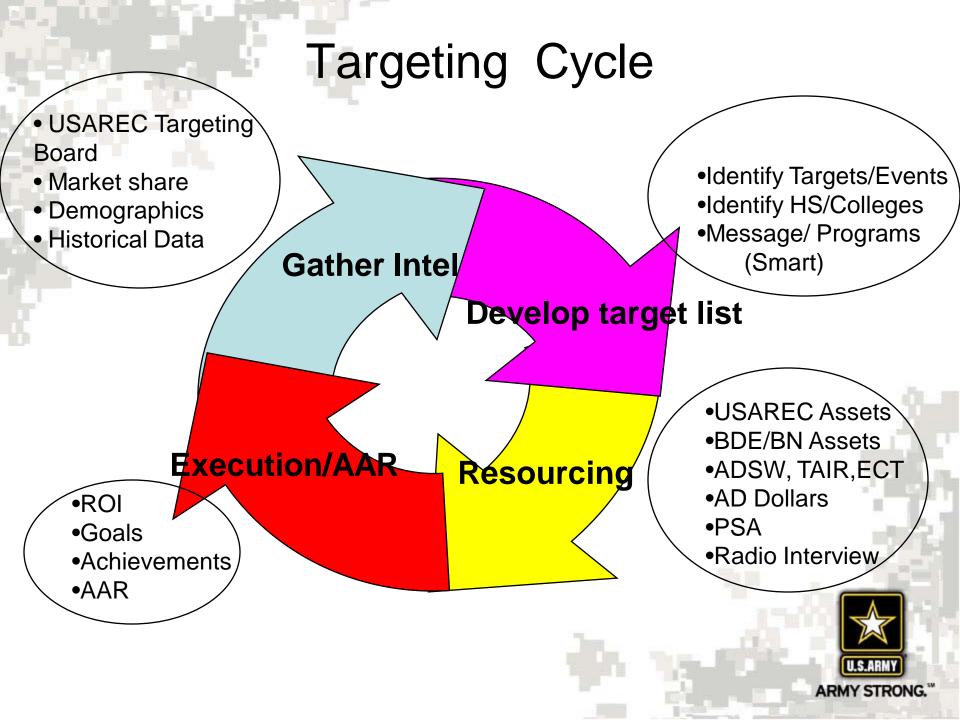
Market Value

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STarMat and Must Win/Must Keep







SAMA Calculations



Step 1: Best Potential Penetration Rate for each TS

- Sum # of Contracts by TS for past 4 years
- Sum TS Population
- For each TS, determine the Potential Penetration rate:

$$PotentialPenRate_{TS} = \frac{4 \text{YrAvgContracts}_{TS}}{TSPop_{TS}}$$

 For each TS, determine the best rate by comparing the RS to RTC:

 $BestPotentialPenRate_{TS} = Max\left(PotentialPenRate_{RS}, PotentialPenRate_{RTC}\right)$



Step 2: Determine the Army Volume Potential for each TS by ZIP

 Multiply the BestPotentiaPenRate by the TS Population for each TS by ZIP

$$TSPotential_{ZIP} = \sum_{TS=1}^{39} BestPotentialPenRate_{TS} *TSPop_{ZIP,TS}$$

- Determine the 4 year average uncoded contracts
- Calculate Army Volume Potential

 $ArmyVolumePotential_{ZIP} = TSPotential_{ZIP} + 4YrAvgNotCoded_{ZIP}$



Step 3: Determine the Army Share of Dod Volume Potential for each ZIP

- Calculate 4 year average Other DoD Volume
- Calculate the Total DoD Volume Potential

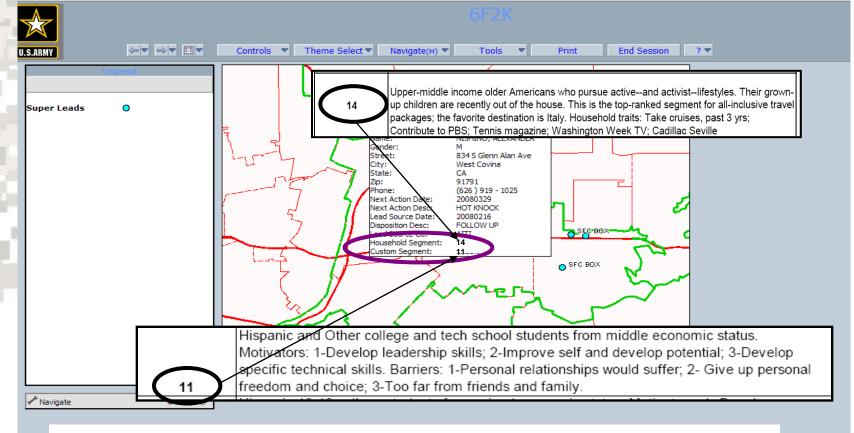
Total DoD Potential = Army Vol Potential + Other DoD Volume

 Calculate the Army Share of the Total DoD Volume Potential

Army Share of Potential = <u>Army Vol Potential</u>

Total DoD Potential





When you mouse over a LEAD, the Household and Custom Segments appear. The number that is associated with them are the numbers you'll refer to when looking in the reference tables. The reference tables will give you a brief description which will be used to develop a message based off of motivators and barriers

Segmentation GAMAT shows the Tactical Segment (Custom) within the "mouse-over" of the LEADS (Contracts/Future Soldiers TBD) field. The Station Commander may download or print out an Adobe .pdf file that can be used as reference tool. The number that is associated with the mouse-over, will coincide with the Tactical Segment number in the Adobe .pdf file.

By analyzing and referencing Market Share layers + LEADS in the GAMAT system, the Station Commander; along with the Recruiter, can develop a well planned avenue of approach to the Prospect by utilizing the Segmentation code. Simple analysis will also show that most LEADS in the specified zip code will fall under the segmentation code providing the Recruiting Station with great potential to enlist and enhance the stations productivity.

ARMY STRONG.





Spatial Analysis in brief

Elizabeth Hagensen
Center for Accessions Research
USAAC G2/9

What is spatial analysis?

An empirical examination of the relationship between a phenomenon and place

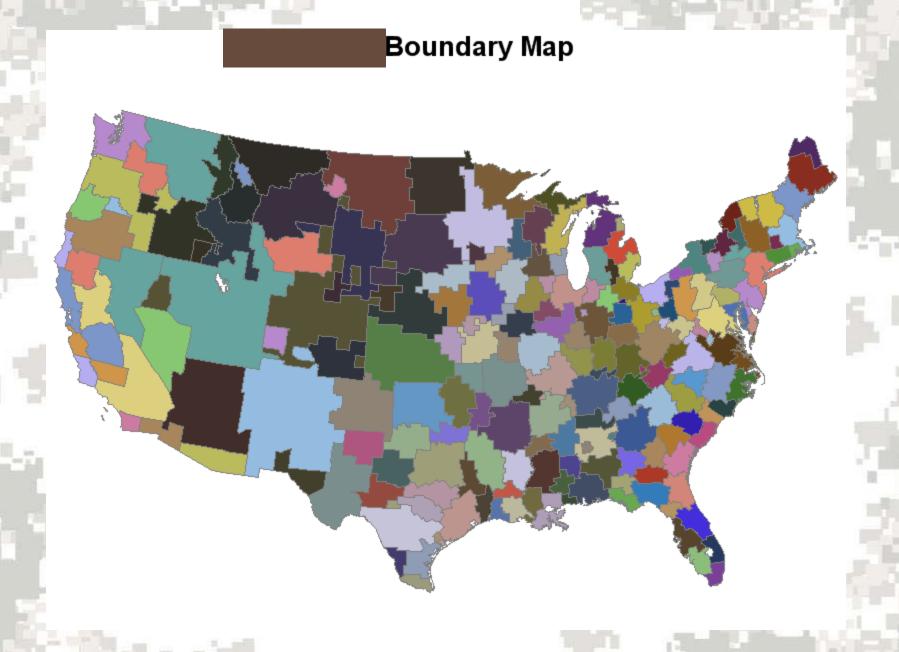
- Is there an observed geographic pattern... is it due to random chance?
- Is the observed value in a particular place dependent upon the values of surrounding features?
- How well does location predict the value at another location?
- Are there spatial trends in the data?

TODAY

Brief overview of spatial analysis

Brief overview of 'special considerations'

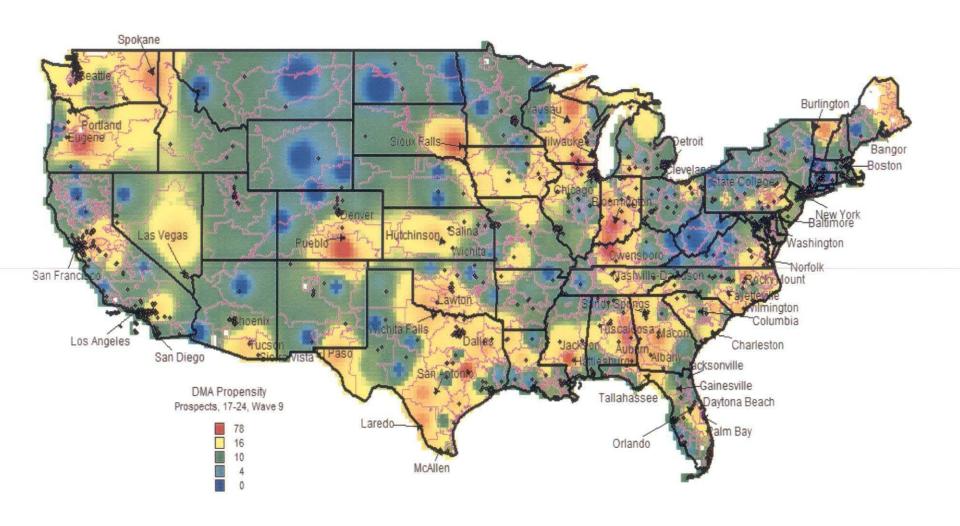
Questions



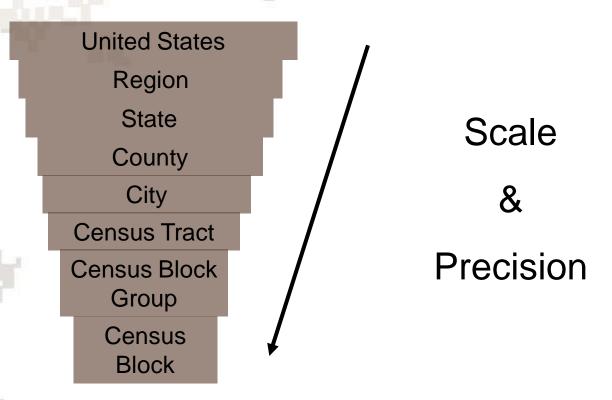
Basic terminology

- Enumeration units
- Aggregate
- Autocorrelation
- Interpolation
- Hotspots
- Raster/vector data types
- Adjacency

- MAUP
- Buffer
- Local
- Global
- Point, line, polygon
- Attribute
- Classification



Geographic Hierarchy

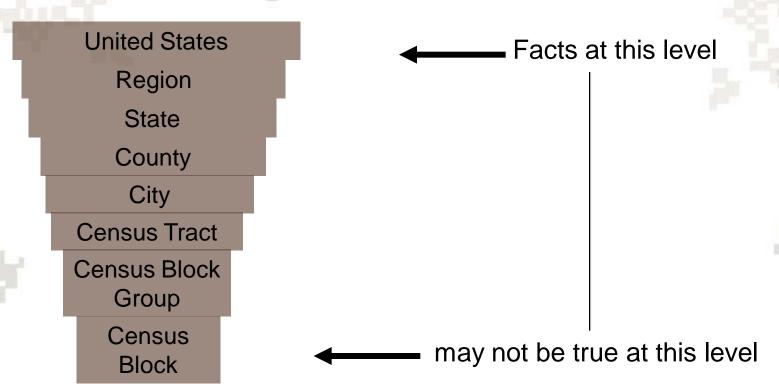


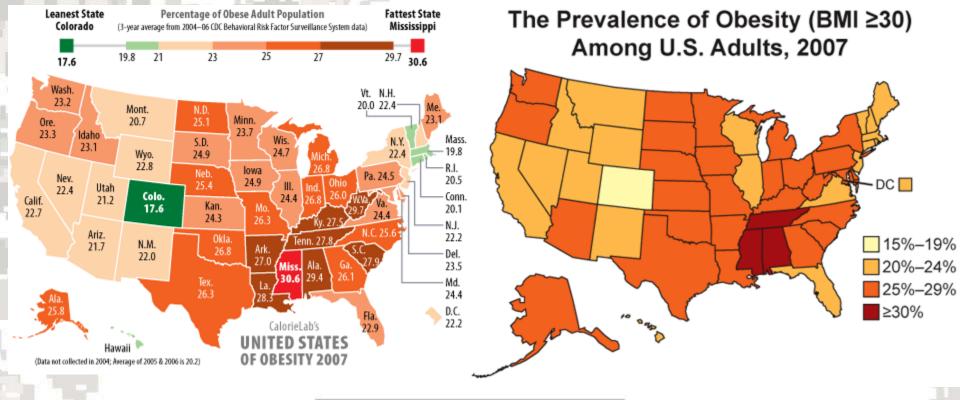
Modifiable Areal Unit Problem

The arbitrary and modifiable nature of area units can influence observed values, analysis, and modeling results

Scale:	homogeneity of variance assumed across large enumeration units; exaggerated distributions; conceal underlying patterns
Boundary:	Arbitrary; can overlap Physical Social Geopolitical Hierarchical = nested
Pattern:	Assumes even distribution across place Assumes uniform directionality Do not abruptly end at boundary end

Geographic Hierarchy







The South is the nation's fattest region with three of the top five states reporting an obesity rate greater than 30 percent in 2007.



Classification

- Unique Values
- Equal Interval
- Equal Frequency
- Natural Breaks(Jenks)
- Standard Deviation
- Manual

Best Practices

No less than four

No more than six

Logical divisions of data

No empty classes

Mutually exclusive

All exhaustive

Spatial Measurements and Statistics

Geographic Analyses

- Central Tendency
 - Mean center: average x,y for all features
 - Median center: shortest total <u>distance</u> to all study features
 - Central feature: most centrally located <u>feature</u>
- Dispersion
 - Standard distance: compactness
 - Direction: compactness and direction

Geographic Analyses

Locations

- Quadrat analysis; points patterns; uniform/random/dispersed
- Nearest Neighbor: average distance to nearest neighbor; clustering vs. dispersion
- Ripley's-K function: adjacency; clustering vs. dispersion
- Join Count: adjacency or shared boundary similarity
- Geary's C: similarity of nearby features
- Morans I: similarity of nearby features
- General G: whether hot spots and cold spots exist within study area
- Gi and Gi*: hotspots statistics

Feature Values

So what?

Be cautious about generalizing

Be mindful and justified in your methods

QUESTIONS

Back Up Slides

Equal Interval

- Each class occupies an equal interval along the number line
 - Range/# classes
 - Upper limits, lower limits: add the interval starting with lowest observation
- Advantages
 - Easy to compute
 - Easy to interpret
 - Good for data with homogeneous (equal) variance
- Disadvantages
 - Ignores the distribution of data
 - Does not find logical clusters
 - Empty classes

Quantiles

- Data is ranked in ascending order, equal number of observations in each class
- Tiles:

Quartile: 4 classesQuintile: 5 classesSextile: 6 classes

- Total # of observations/# of classes
- Advantages
 - No empty classes
 - Legend clarity, simplicity
 - Good for data with homogeneous (equal) variance
 - Good for ordinal data
- Disadvantages
 - Ignores the distribution of the data
 - Reader must carefully read the legend

Mean-Standard Deviation

- Considers the distribution of the values along the number line: how far the value(s) are away from the mean
- Used to show contrast of values
- Classes according to SD (-2, -1, 0, 1, 2)
- Advantages
 - Good for a normally distributed dataset
 - Useful for showing extremes, difference, contrast
- Disadvantages
 - Average reader not knowledgeable of SD and statistics
 - Few datasets are normally distributed

Maximum Breaks

 Raw data is ordered from high to low, differences between adjacent values calculated: largest of these differences are used as class breaks

Advantages

- Easy to compute
- Can focus on areas of large value differences

Disadvantages

- Miss natural clusters
- Not widely used
- Must read legend carefully
- Odd sized classes, gaps in number line

Natural Breaks

- Classifies data according to natural clusters
- Mapper subjectively groups the data after referencing data graphs or number lines
- Advantages
 - Best for showing character of the dataset
 - Computer can do for you (Jenks method)
 - Very common for thematic mapping
- Disadvantages
 - Subjective
 - Must be defended

Optimal

- Numerically find similar values, class the data, and compare the median value
- Group values based upon equal levels of variance
- Rarely used

Manual

- User-defined classes
- Must justify classes, know dataset
- Hypothesis testing (H_o, H_a)



Human Research Protection Refresher Training

2009 Accessions Research Consortium (ARC) Hampton, Virginia 1-3 September 2009



Purpose & Outline

PURPOSE: To provide an overview of the responsibilities in conducting and reviewing social & behavioral research (SBR) in the Army

- Why Must Social & Behavioral Research (SBR) be Reviewed by an IRB?
- 2. Background: The Common Rule
- 3. IRB Review Responsibilities in SBR
- 4. Informed Consent
- 5. Obtaining Informed Consent in SBR
- 6. Special Considerations in Conducting SBR with Active Duty Military



I. Background: The Common Rule 32 CFR 219



Common Rule Subparts

32 CFR 219 – Policy for Protection of Human Research Subjects, 18 June 1991

- The Common Rule, "Federal Policy for the Protection of Human Subjects," Subpart A
- Subpart B: Additional Protections Pertaining to Research,
 Development, and Related Activities Involving Fetuses, Pregnant
 Women, and Human In Vitro Fertilization
- Subpart C: Additional Protections Pertaining to Biomedical and Behavioral Research Involving Prisoners as Subjects
- Subpart D: Additional Protections for Children Involved as Subjects in Research



Basic Protections

The regulations contain three basic protections for human subjects:

- Institutional Assurances
- IRB Review
- Informed Consent



Defining Human Subject Research

- Research: A systematic investigation, including research, development, testing and evaluation, designed to develop or contribute to generalizable knowledge (32 CFR 219.102(d))
- Human Subject: A living individual about whom an investigator conducting research obtains
 - data through <u>intervention</u> or <u>interaction</u> with the individual; or
 - identifiable private information(32 CFR 219.102(f))

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How SBR is Conducted

- By social scientists and qualitative researchers
 - Direct or concealed observations with field notes
 - Face-to-face interviews
 - Focus groups
 - Diaries or journals
 - "Testing"
- As most commonly seen in DoD
 - Pencil & paper questionnaires
 - Computer-based or Internet surveys
 - Mailed surveys
 - Telephone surveys



How SBR Data are Recorded

- Field notes (unstructured or structured)
- Interview guides (unstructured or structured)
- Questionnaires (open-ended or forced choice)
- Pre-coded questionnaires or answer sheets
- Direct entry into computerized data files
 - PDAs; Notebook Computers; Physiological Monitors;
 Computers stationed at kiosks, homes, offices
- Audio or video-recordings
- Transcriptions



IRB Review Responsibilities in SBR



IRB Responsibilities

Identify risks

- Determine that risks are minimized
- Determine that "risks to subjects are reasonable Fin relation to anticipated benefits"
- Determine that subjects are adequately informed. about "any reasonably foreseeable risks or discomforts"



Examples of Potential Risks in SBR

Emotional or psychological harm

- Research interaction causes upset
- Worry about breach of confidentiality

Social harm

Stigma or other negative social outcomes resulting from breach of confidentiality

Physical harm

 Studies focusing on domestic violence, gang activity, political activity in a conflict zone, or other phenomena concerning violenceprone individuals if study results become known to others

Financial harm

Revelations could result in the loss of employment or insurance coverage

Legal harm

The disclosure of illegal activities



Primary Risk in SBR

- Primary source of social risk results from a breach of confidentiality
 - Confidentiality and privacy are not the same
 - Confidentiality refers to data; and to the agreements that are made about ways in which information is restricted to certain people
 - Privacy refers to persons; and to their interest in controlling the access of others to themselves
 - Names are not the only identifiers
 - Subjects' participation in the research may need to be kept confidential as well as their data



IRB Responsibilities

- Identify risks
- Determine that risks are minimized
- Determine that "risks to subjects are reasonable in relation to anticipated benefits"
- Determine that subjects are adequately informed about "any reasonably foreseeable risks or discomforts"



Minimizing Risk

Three ways to minimize risk

Alternatives

IRB evaluates whether other procedures that are less risky could be used

Precautions

- IRB ensures procedures are in place to decrease the likelihood that harms will occur
- IRB ensures methods used to identify potential research subjects or to gather information about subjects do not invade the privacy of the individuals
- IRB ensures adequate measures are taken to protect individually identifiable information once it has been collected to prevent breach of confidentiality that could lead to a loss of privacy and potentially harm human subjects

Safeguards

IRB ensures there are procedures in place to deal with harms if they occur



Protecting Privacy and Confidentiality

- Separate personal identifiers from data sets
- Anonymized vs. de-identified vs. coded
- Demographic and other data
 - What is "nice" to know
 - What "needs" to be known
- Aggregate vs. Individual Data (When is the cell too small to protect identity?
- Use of e-security
 - Lap tops & hand-held devices
 - Use of Internet: Passwords, firewalls, encryption, back-up files
- Controlling access to hard copy data
- Planning for storage of e-files & hard copy
- Access (who, when, how, what?)
- Disposition of data (When, how, by whom?)



IRB Responsibilities

- Identify risks
- Determine that risks are minimized
- Determine that "risks to subjects are reasonable in relation to anticipated benefits"
- Determine that subjects are adequately informed about "any reasonably foreseeable risks or discomforts"



Risk/Benefit Evaluation

- Evaluation of risk benefit ratio is subjective
- IRB must decide whether the anticipated benefit justifies asking subjects to undertake the risks

IRB should take into account different subject populations and individual differences among subjects



IRB Responsibilities

- Identify risks
- Determine that risks are minimized
- Determine that "risks to subjects are reasonable in relation to anticipated benefits"
- Determine that subjects are adequately informed about "any reasonably foreseeable risks or discomforts"



Informed Consent 32 CFR 219.116 & 117



Informed Consent

What is it?

 A continuous process that involves providing subjects with sufficient information about the conduct of the research and potential benefits and risks so that the subject can make a reasoned and informed decision about whether to participate in the research study

When does it begin?

Prior to collecting any research related information from the subject



Informed Consent

- Consent process should empower subjects to make their own determination about risk
- Risks should be explained in terms that the subject can relate to – i.e., everyday life experiences
- Consent process should not do more harm than the research
- There is no such thing as "passive consent"
 - Consent is required unless formally waived
 - Documentation of consent is required unless formally waived
- There is no such thing as a "secondary subject"
 - If an investigator obtains "identifiable private information" about a living individual, the individual is a human subject, regardless of the source



Informed Consent Process (32 CFR 219.116)

Legally effective informed consent shall:

- Be obtained from the subject or the subject's legally authorized representative;
- Be in <u>language understandable</u> to the subject or representative;
- Be obtained under circumstances that provide the subject with the opportunity to consider whether or not to participate (sufficient time), and that minimize coercion influences;
- Not include language through which the subject is made to waive any of his legal rights or which releases the investigator, sponsor or institution from liability for negligence



8 Required Elements of Informed Consent (32 CFR 219.116(a); 1 of 2)

- Statement that study involves research; explanation of purposes of research and expected duration of subject's participation; description of procedures to be followed; and identification of any procedures which are experimental
- Description of foreseeable risks or discomforts to the subject
- Description of any benefits to the subject or to others which may reasonably be expected from the research
- Disclosure of appropriate alternative procedures or courses of treatment, if any, that might be advantageous to the subject



8 Required Elements of Informed Consent (32 CFR 219.116(a); 2 of 2)

- Description of the extent to which confidentiality of records identifying subjects will be maintained
- For research involving greater than minimal risk, explanation as to whether any compensation and/or medical treatments in the event of injury will be provided and if so what will be covered
- Explanation of whom to contact if questions arise about the research, the subjects' rights or whom to contact if research-related injury occurs
- Statement that participation is voluntary, that refusal to participate involves no penalty or loss of benefits, and that subject may discontinue at any time



Special Considerations in Conducting SBR with Active Duty Military



Uniform Code of Military Justice

- Examples of behaviors addressed in the UCMJ
 - Substance use/abuse
 - Sexual conduct
 - Violence
- Duty to Report
 - Military investigator
 - Non-military investigator



Uniform Code of Military Justice

- Consequences for violations of UCMJ: Nonjudicial punishment or court martial
 - Monetary fines
 - Incarceration
 - Stuck in place (Non-promotable not an actual penalty but is a common and likely consequence of having been convicted)
 - Reduction in grade
 - Dishonorable discharge (only if convicted at court martial)



SBR Issues with Active Duty Military Personnel

- Identifying potential participants
 - Accessing databases and databanks
 - Obtaining support from the Chain of Command
- Individual recruitment
 - Newspaper, flyers, posters, e-mail or web-based
 - Introduction and endorsement letters (Role of Commanding Officer)
- Group Recruitment
 - Setting
 - Ombudsperson
 - Ensuring autonomy
- Enticements (incentives)
 - Compensation
 - Rewards or penalties



Consent Issues

- Obtaining consent
 - Who (Military vs. civilian)
 - How (one-on-one or group setting)
 - When (On-duty vs. off-duty)
 - Where (On-base vs. off-base)
 - Potential for Coercion
 - What & Why



SBR with Military Personnel

- Military personnel are a population with special characteristics
- Social & behavioral data can jeopardize the participant's military career and personal well being
- Under the UCMJ, military investigators have special responsibilities



Contact Information

Melanie N. Clark

Human Protections Administrator

U. S. Army Accessions Command

G2/9 Center for Accessions Research

232 Old Ironsides Avenue

Fort Knox, Kentucky 40121

Office Phone: 502-626-0060

Email: melanie.clark@usaac.army.mil

melanie.newton.clark@us.army.mil



Army Accessions Research Consortium

Neural Networks in Selection Research

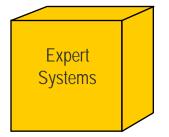
David J. Scarborough, Ph.D.

Scientist at Large

Kronos Hiring Solutions Group

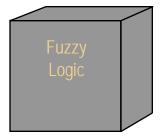


Current applications of artificial intelligence



Logistics planning, internet routing, financial analysis, credit rating, customer service decision support, commodities trading, computer aided design and manufacturing, *employee selection*, *psychological assessment interpretation*, medical diagnosis, air traffic control, inertial navigation, software help and installation programs, software engineering

Genetic Algorithms Data compression and encryption, aircraft design, anticipatory switching in telecommunications, international security policy analysis, robotic movement control, chemical engineering, fault diagnosis, sonar information processing, combinatorial optimization, flight combat strategy

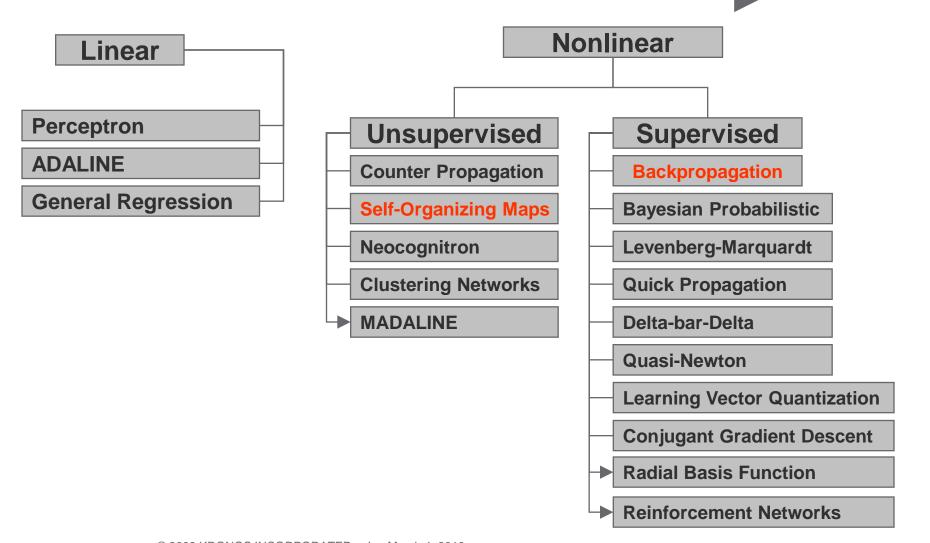


Bullet train operations, climate control systems, flight control systems, automotive carburetion, elevators, weather simulations, econometric modeling, smart consumer products (VCR's, Radios, Televisions), robotic vision and pattern recognition, postal sorting equipment, nuclear power fail-safe control systems, refinery production control systems

Neural Networks Actuarial risk assessment, marketing research, missile guidance systems, DNA sequencing, satellite and sonar imaging, investment analysis, voice and handwriting recognition, manufacturing, scheduling, quality control, real-time process control, currency arbitrage, commodities trading, airline route scheduling, policy analysis, medical diagnosis, horse racing, gambling, *employee selection*, child abuse risk assessment

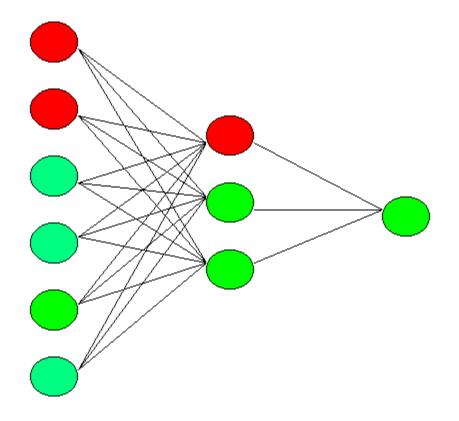


Types of feed-forward networks





Types of modern neural nets: Feed forward networks



<u>Supervised learning</u>- Correct answers are known and connection weights are modified in proportion to their contribution to output error.

<u>Unsupervised learning</u>- Data inputs are not associated externally (no correct answers). Iterative exposure to sample data causes connection weight matrix to *converge* in a pattern that resembles the features of the sample data.

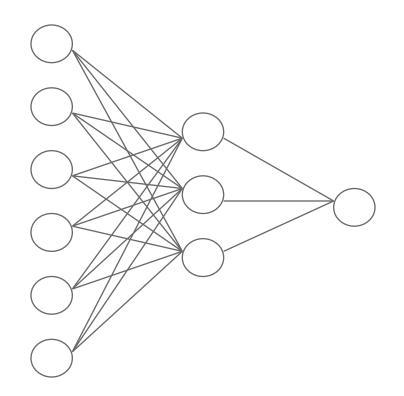
In feed forward networks data flow is in one direction, from input to output. Connection weights and node outputs are independent of values in successive nodes.



Using neural nets for employee selection

Input Predictors

- Experience
- **Ability**
- **Attitudes**
- Personality
- **Biodata**



Output Criteria

✓ Performance

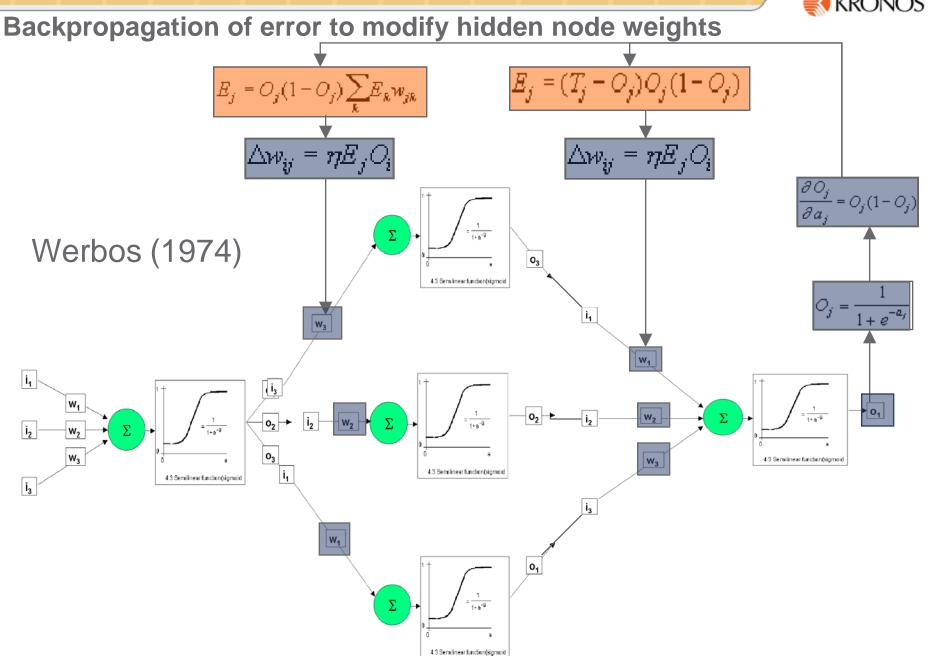
✓ Tenure

Reliability

✓ Delinquency

Scarborough, D. 1995. An evaluation of backpropagation neural network modeling as an alternative methodology for criterion validation of employee selection testing. Doctoral dissertation, University of North Texas.





March 4, 2010

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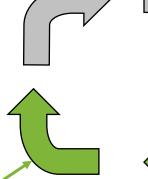


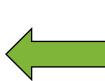
Training cycle for a three-layer backpropagation network

Single case data is passed to the input layer. Output is passed to the hidden layer and multiplied by the first set of connection weights

Incoming signals are summed, transformed to output and passed to second connection weight matrix

Incoming signals are summed, transformed and network output is produced







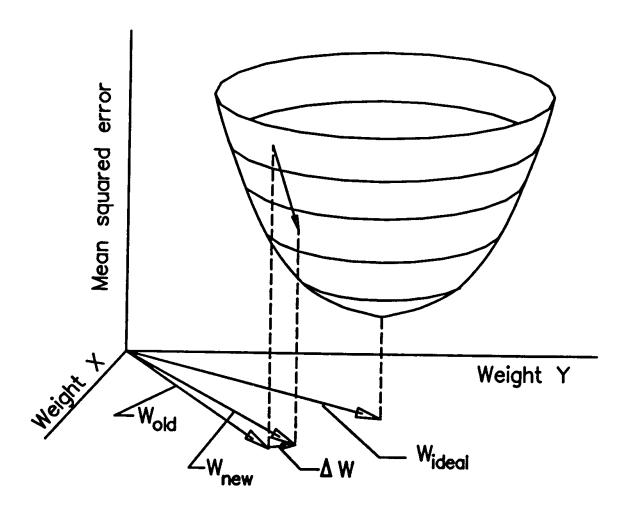
Modified connection wt.s saved for next cycle, next case input set queued for next cycle

Connection weights are adjusted in proportion to their error contribution

Output value is subtracted from known value for that case. Error terms passed backward through network

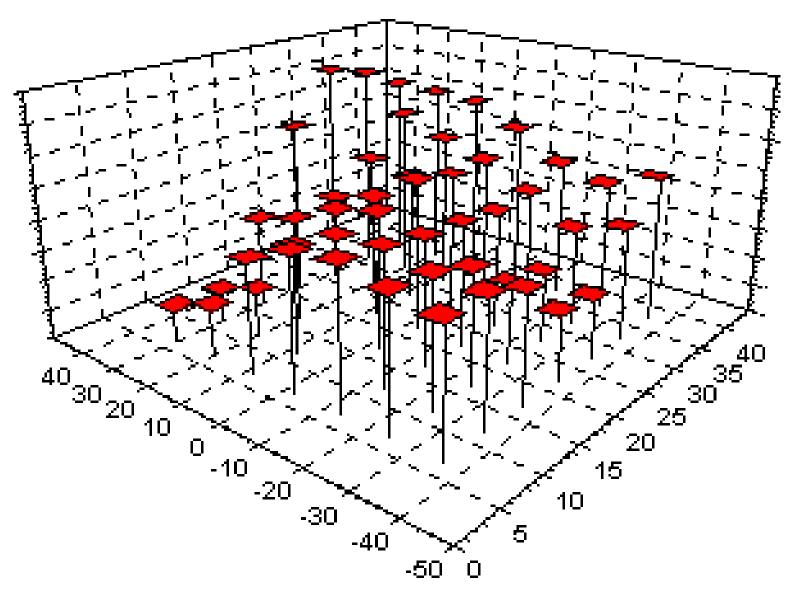


Geometric representation of gradient descent algorithm toward lowest mean squared error solution



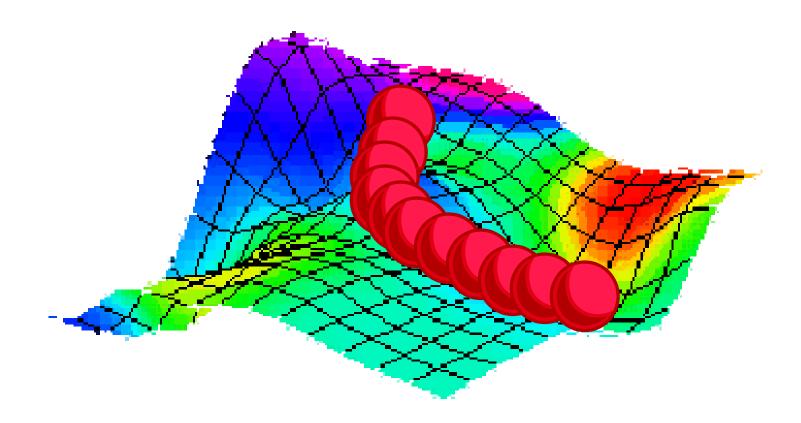
Gradient descent of the connection weight matrix under the Delta rule (Caudill and Butler 1990).





Energy surface March 4, 2010





Gradient descent of weight matrix on the energy surface



In the social sciences, neural nets can be applied to:

Classification

Sorting people or objects into categories using measures of defining characteristics

Statistical corollaries:

Discriminant analysis

Multi-dimensional scaling

Cluster analysis

Ranking

Identifying the ordinal position of people or objects on an unknown independent variable using related dependent variables

Statistical corollaries:

Non-parametric rank correlation analysis

Kruskal-Wallace rank sum test

Prediction

Estimating the amount of an unknown independent variable using related dependent variables

Statistical corollaries:

- Linear and nonlinear multiple regression
- Structural equation modeling



A neural model trained to estimate tenure in days of video rental service personnel

Input Variables Plan to stay? Former employee? Education level? __ Applied before? Source of Referral? Desired position? Desired hourly pay? Desired employee category? Full time or part time? Available to start? Other commitments? Personal commitments? Reason for leaving Hollywood? Reason for leaving last job? Last job function? Last work area? o-Supervisor last name? o-Contact Information? O-Reason for leaving prior job? -Prior job function? O-Prior job work area? O Prior supervisor last name? Awards? Last name of referral?

Quickprop network
47 input variables
36 hidden layer nodes
1 output node
Activation: hyperbolic
tangent function
3000 Training epochs

Output = Tenure in days

Performance on New Data

Error Mean: 39.9388

Correlation with Tenure: 0.5151

Significance (p<0.01)

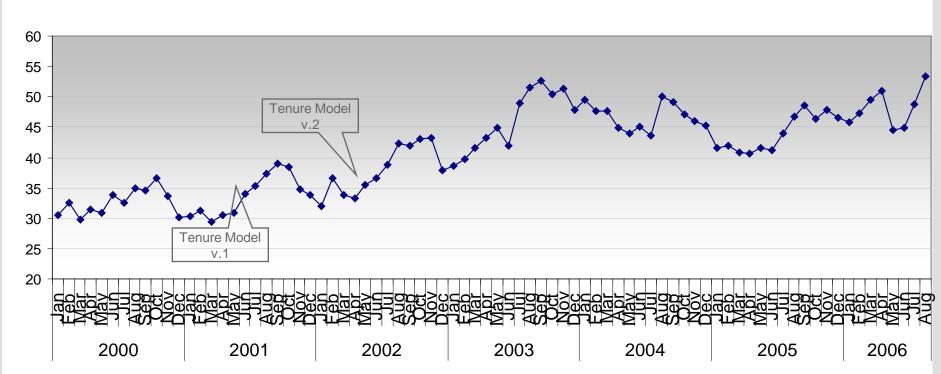
Development Sample N=2495

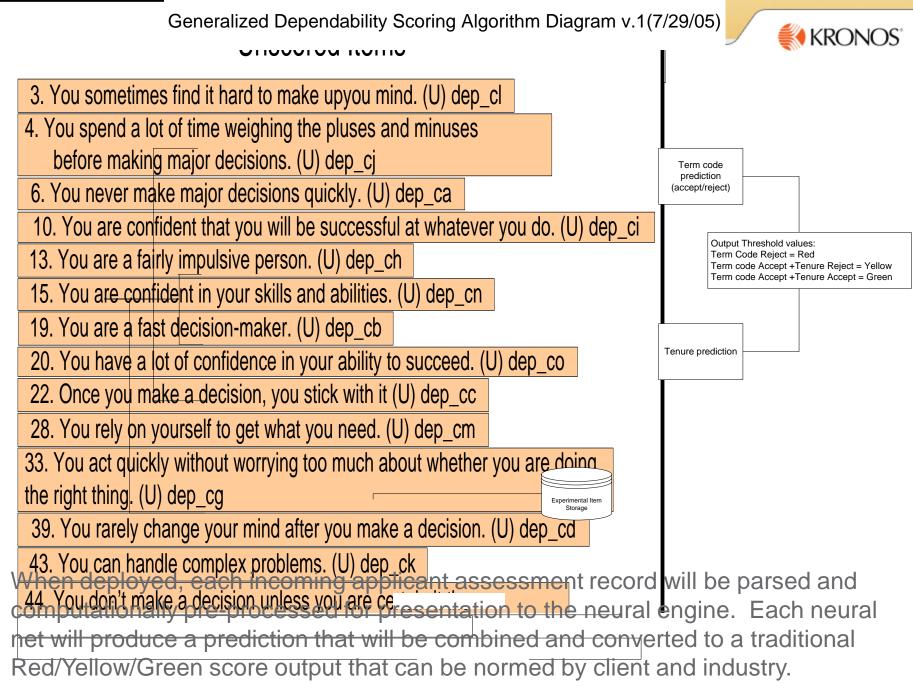
Independent test sample N = 600

25 psychological Questions

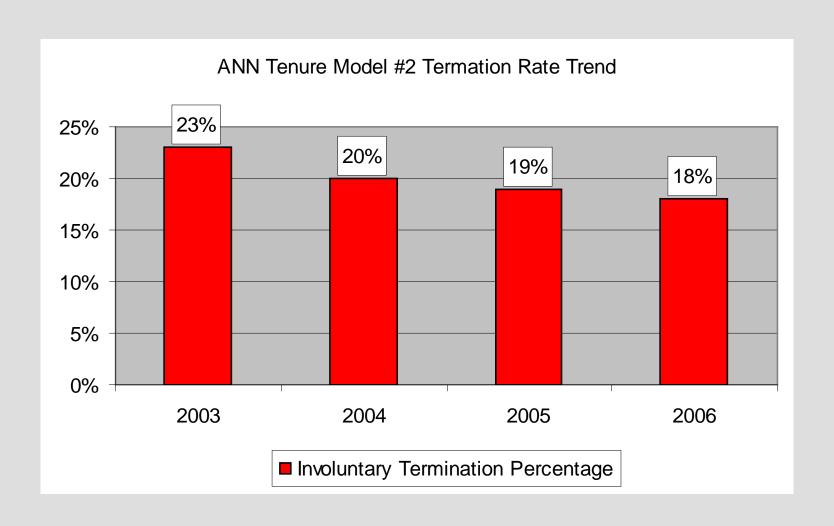
ANN Tenure Model #2-Longitudinal trend on average length of service



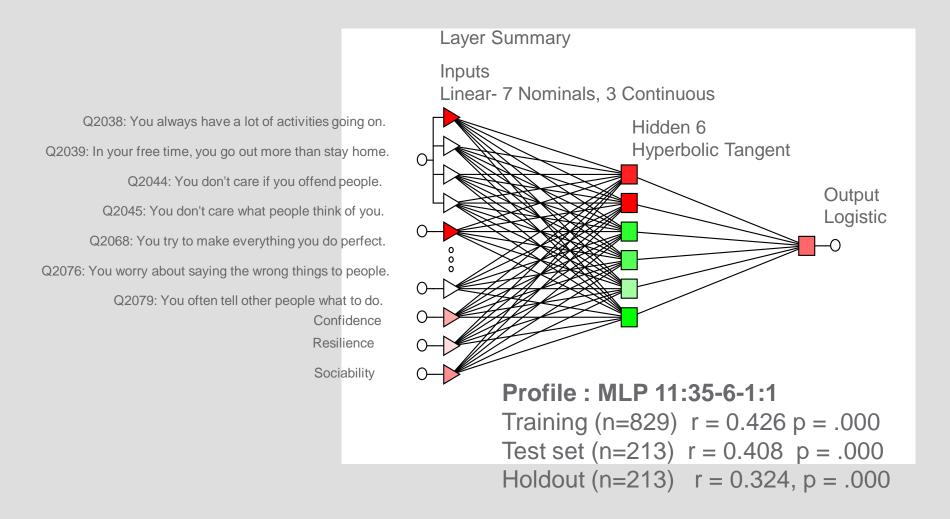




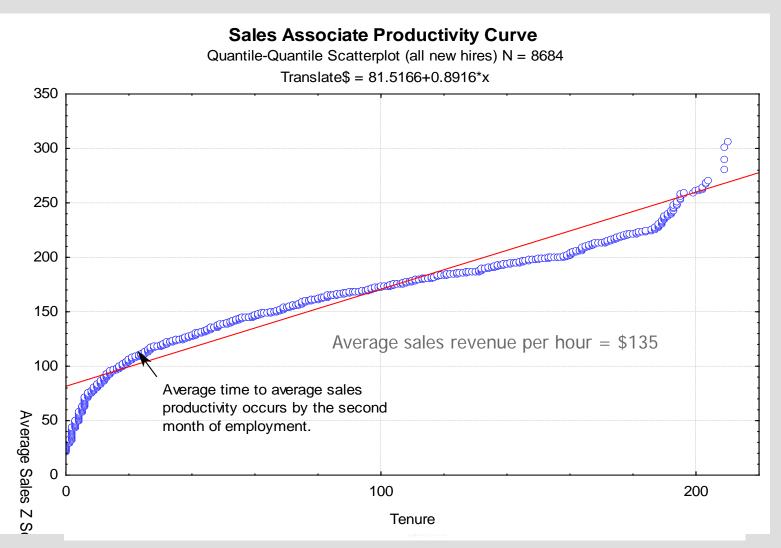
Involuntary termination trend among grocery store clerks



ESNN trained to estimate sales productivity

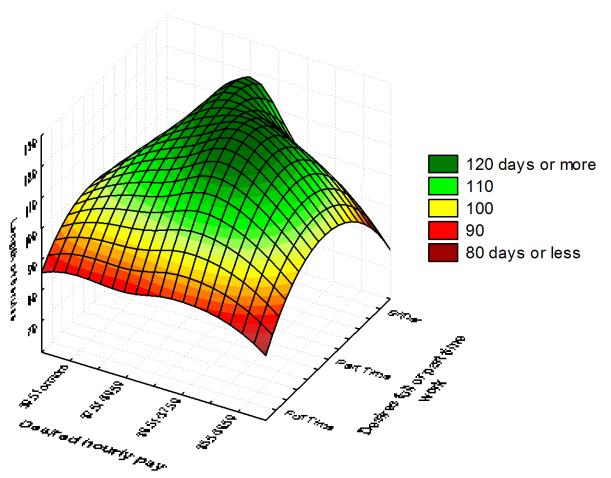


Sales Productivity ANN#3



Data mining is a set of procedures for revealing

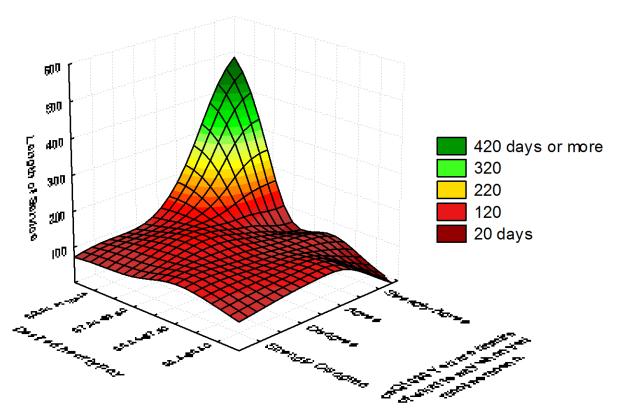
Biodata interactions with length of service (n=1117)



Desired hourly pay and Desires full or part time work (n = 1117)

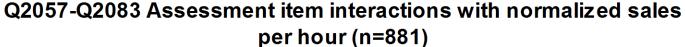
expected and <u>unexpected</u> patterns in data.

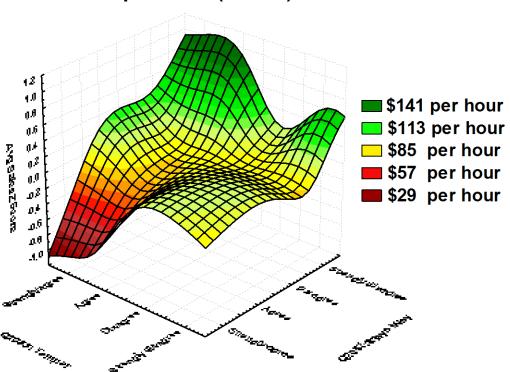
Biodata and Personality interactions with length of service (n= 1117)



Desired hourly pay and CSQ1030 "You are unsure of what to say you first meet someone." (n = 1117)

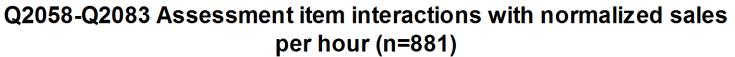
Employee selection neural networks (ESNN) are

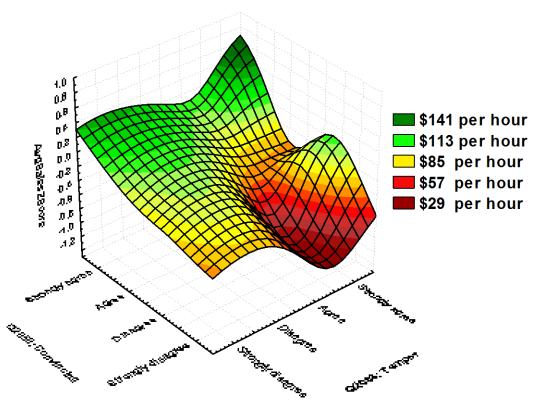




Q2057: When you are done with your work you look for more to do. Q2083: When things go wrong, it's hard to control your temper.

developed to simulate the observed relationships



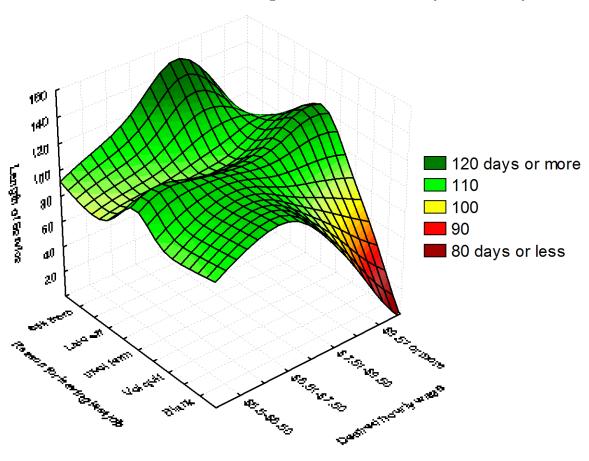


Q2058: You are skilled at convincing people.

Q2083: When things go wrong, it's hard to control your temper.

between applicant data and employee performance.

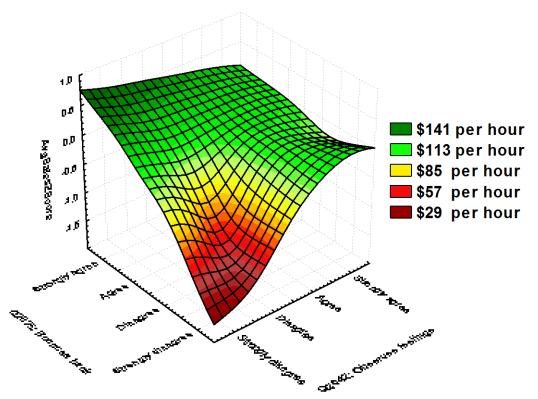
Biodata interactions with length of service (n=1117)



Reason for leaving last job Desired hourly wage

ESNN's are then converted to software

Q2042-Q2075: Assessment item interactions with normalized sales per hour (n=881)

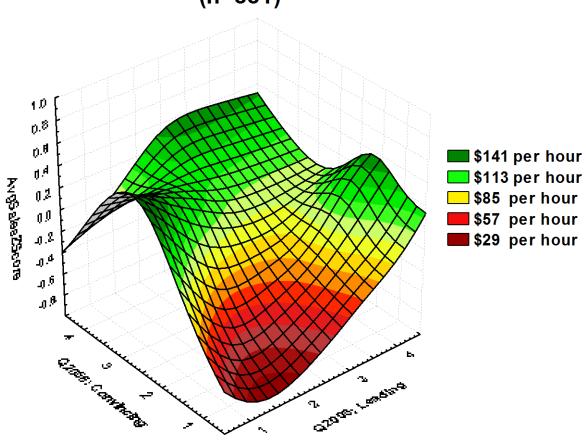


Q2042: You pay close attention to people's feelings.

Q2075: You bounce back right away from disappointments.

and embedded in the decision support system.

Q2003-Q2058 Item interactions with normalized sales per hour (n=881)



Q2058: You are skilled at convincing people.

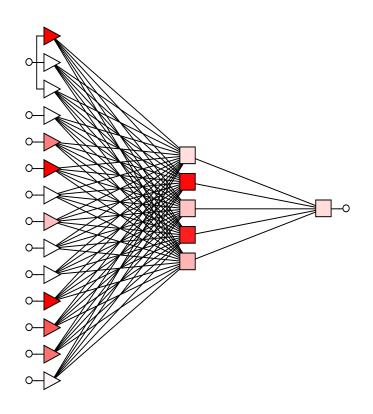
Q2003: You are good at leading people.

When should NNs be considered?

- When sample data shows high dimensionality, multiple variable types, complex interaction effects or does not meet parametric assumptions
- When evaluation of alternative models is required
- When relationships between independent and dependent variables are weak and unexplained variance is large.
- When the research application supports or requires the use of data mining procedures
- When the theoretical basis of prediction is ambiguous or poorly understood
- •When operational use of the predictive model requires high fault tolerance
- •When conventional modeling is unnecessary or cannot be completed under operational time constraints.



Summary



- Neural nets are general function simulators that store data patterns in connection weights through iterative exposure to sample data
- Used to solve complex problems previously considered intractable
- ANN's "learn" pattern information stored in sample data and then apply that learning to new data
- Neural nets use "brute force"
 computational techniques to discover
 hidden relationships in complex data
- ANN's produce meaningful estimates even when incoming data is noisy or flawed
- Neural nets can process different types of data simultaneously.

Discussion



Neural Networks in Selection Research

U.S. Army Accessions Research

Consortium

September 1-2, 2009

David J. Scarborough, Ph.D.

Scientist at Large

Kronos Hiring Solutions Group

david.scarborough@kronos.com

www.kronos.com

Associate Professor of Management

College of Business & Technology

 ${\tt david.scarborough@bhsu.edu}$

Artificial Neural Networks

Artificial intelligence (AI) is a specialized branch of computer science that attempts to simulate human intelligence with computer circuits and sophisticated software. Historically, AI research has taken two approaches to machine intelligence; expert systems and neural networks. Expert systems capture the knowledge of human experts using rule-based programs to gather information and make sequential decisions based on facts and logical branching. These systems require human experts to construct the decision models necessary to simulate human information processing. Expert systems are used to standardize complex procedures and solve problems with clearly defined decision rules (Lawrence 1993).

Neural networks (also commonly called neural systems, associative memories, connectionist models, parallel distributed processors, etc.) are computer simulations of neuro-physiological structures (nerve cells) found in nature. Unlike expert systems, artificial neural networks learn by association or experience, rather than by being programmed. Like their biological counterparts, neural networks form internal representations of the external world as a result of exposure to stimuli. Once trained, they can generalize or make inferences and predictions about data that they have not been exposed to before. Neural networks are able to create internal models of complex, nonlinear multivariate relationships, even when the source data is noisy or incomplete. It is this capacity to function with uncertain or missing data that makes a neural processor valuable in the real world (Caudill 1990).

Computer simulated neural networks do not approach the complexity and capabilities of biological nervous systems. Even so, neural networks show tremendous potential for solving a wide variety of problems in machine intelligence, classification, optimization, pattern recognition and other areas. Neural networks are currently being used in missile guidance systems, deep space navigation, robotic vision and control systems, investment analysis, computer recognition of voice and handwriting, manufacturing, scheduling, quality control, real-time process control, currency arbitrage, commodities trading, airline route scheduling, bullet train operation, climate control systems, policy analysis, medical diagnosis, horse racing and gambling to name only a few (Glatzer 1992; Schwartz 1992; Bylinsky 1993). This paper describes the application of neural

network technology as a viable alternative to traditional statistical prediction of employee job performance.

As is often the case with a commercially successful innovation, applications of neural networks in the business community have outpaced published academic research. Expanding application of neural processors to address classification and prediction problems are one indicator of the perceived utility of these programs. Market acceptance alone, however, does not prove that neural networks are superior to or should replace traditional statistical methods. Formal research and documentation comparing the accuracy of neural programs to statistical methods is needed to determine if this growing acceptance is justified.

Neural networks may represent an entirely new approach to employee selection research that is well suited to the nature and complexity of criterion-related validation. Should the neural network approach compare favorably to traditional methods by obtaining similar or higher predictive accuracy, documentation of the development of such networks will be a useful reference for future industrial and academic researchers. Paradigm selection, training alternatives, data preparation, learning rates, neuronal configuration and a host of other technical issues must be resolved before a neural network is operational. Finally, a self-learning algorithm, able to continuously revise predictive models using longitudinal feedback, may overcome some of the problems associated with one-time concurrent research designs. Validation models are subject to temporal decay as demographic and social variables change. The adaptive ability of neural processors to adjust internal models when exposed to new data is well documented and may represent a significant advantage of neural network based selection over traditional methods.

Neural Network Theory

Artificial neural networks are theoretical representations of the information processing behavior of living nerve cells. Although computer simulated neural processing is advancing rapidly, the complexity and processing capacity of the most advanced applications are many orders of magnitude less complex than their biological counterparts. Table 1 provides an approximation of the relative size of several neural systems:

Neural System	Approximate number of neurons	Typical number of connections (per neuron)
Human Brain	100,000,000,000	1000 to 10,000
Dragonfly	10,000	1000
Computer neural systems	1,000	100-300

Table 1. Relative size of biological vs. artificial neural systems (Kempka 1992)

Despite their simplicity when compared to organic nervous systems, computer simulated neural networks are no longer viewed solely in terms of their bio-theoretical origin. Artificial neural networks have been widely deployed as general function approximators in an expanding list of industrial, scientific, financial and technological applications. Nevertheless, it is useful to briefly describe the organic structures from which neural network theory has evolved to describe how artificial neural networks behave.

A biological neuron has three basic parts as shown in Figure 1. The soma is the main body of the cell, where incoming electro-chemical signals are received through hair-like extensions called dendrites. Incoming messages from the dendrites are stored until the level of ionic activity within the soma exceeds a threshold level, at which time the cell releases an electrical impulse through a branching structure called an axon. The electrical impulse travels to the end of the axon and is released in an area between the axon of the sending cell and the dendrites of other cells. This area between cell structures is called a synapse.

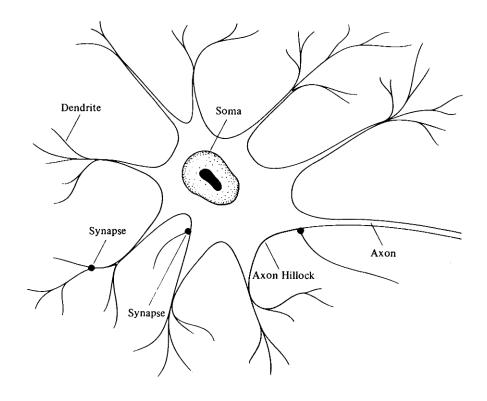


Figure 1. Biological neuron (Caudill 1992)

Synaptic junctions can have different effects on the magnitude of the electrical impulses traveling between neurons. Excitatory synapses amplify signal strength, making the receiving neuron more likely to activate and send the impulse along to other neurons. Inhibitory synapses have the opposite effect. The numbers of ions in the soma accumulate as incoming signals are received. When the electrical charge reaches about 75 millivolts above the resting state of the neuron, the charge is passed to the axon and the soma returns to a resting state (Lawrence 1993). For more information about the human brain and neurons, see (Arbib 1989; Kosko 1993).

An artificial neuron also processes input and produces output. Instead of neurotransmitters, computer simulated neurons receive and process arrays of numbers. Ionic activity within the neuron is simulated by a summation or activation function. Synapses between neurons are represented by connection weights that modulate the effect of each input. Thresholding effects are modeled by a transfer function that processes the summed weighted inputs

of the activation function into the final output of the neuron.

Figure 2 illustrates basic neural processing with a graphic representation of an early artificial neuron known as the Perceptron. Input $(x_1,x_2,\ldots x_n)$ is multiplied by the connection weights $(w_1,w_2,\ldots w_n)$ and given to the activation function. The activation function specifies how the weighted input is processed. Activation values can be discrete or continuous, bounded or unbounded. The state of activation refers to the state of the neuron at a given point in time. Some activation functions include a residual that records the previous output value allowing a neuron to "self-excite," while others include a stochastic noise factor.

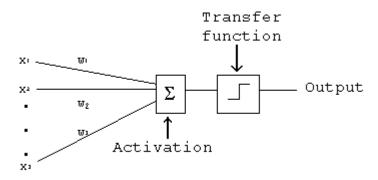


Figure 2. The McCulloch-Pitts/Perceptron neuron (Wasserman 1989)

Neural networks can also be classified by the type of transfer function employed. In general, transfer functions are either linear or non-linear. The output of the linear neuron is a linear function of the activation value. The activation value is simply multiplied by the gain to derive the output. Linear transfer functions are not widely used because most problems cannot be adequately represented by multiplication. The perceptron used a linear threshold transfer function, shown in Figure 3, in which the output is a constant multiple of the input over some range. Below that range, the activation value is 0, above that range, +1.

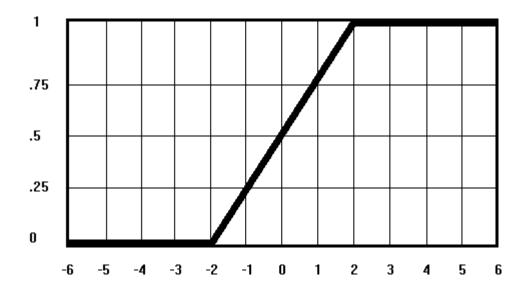


Figure 2-3. Linear threshold function with .25 gain

Because of thresholding, the output of threshold transfer functions are linear. Linear thresholding was found to limit perceptron learning to problems that are linearly separable and as a result, of limited value in most real world applications (Minsky and Papert 1969).

The most commonly applied transfer function is the sigmoid function, shown in Figure 4. Also called a semilinear, or squashing function, the sigmoid function and its derivatives are a continuous, monotonic function of the input that asymptotically approaches both high and low values. At the center point, gain is directly proportional to the derivative, while at high and low gain the sigmoid is almost a step function. The sigmoid derivative exhibits a Gaussian distribution and results in a continuous output between 0 and 1. The sigmoid and its cousin, the hyperbolic tangent transfer function work particularly well with backpropagation neural networks.

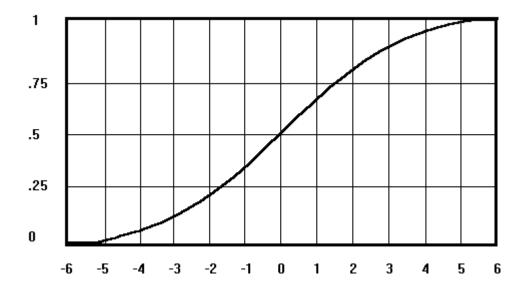


Figure 4. Sigmoid transfer function with .25 gain

The hyperbolic transfer function, shown in Figure 2-5, also produces continuous, monotonic output and a Gaussian derivative but is bounded by -1 and 1 with 0 at the center point. Other neural transfer functions include the hard limit/step, staircase, Gaussian, threshold exponential, exponential-distribution, ratio polynomial, pulse coded and competitive signal transfer functions. For more information about neural network transfer functions see Kosko(1992).

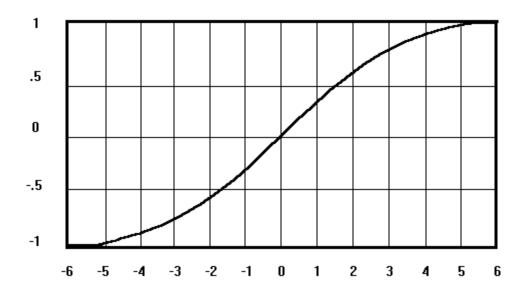


Figure 5. Hyperbolic tangent function with .5 gain

Neural networks can be further classified by their training algorithm or learning rule. A supervised network has its output compared to known correct values for each input set during training and uses the difference to adjust its weights accordingly. Unsupervised networks are not provided with corrective supervision but instead learn to associate through trial and error.

Networks of individual neurons can be configured in a variety of architectures. Some networks employ only a single layer, others use multiple layers. Input and output connections between neurons can flow forward and/or backward through the network. If a neuron's output is never dependent on the output of subsequent neurons, the network is of the feed forward type. Incoming signals flow only in one direction. Other networks employ feedback loops in which the output of some neurons is fed back as input to other neurons.

There are over forty different paradigms of neural networks which vary by architecture, activation and transfer function, training parameters, applications and so on. Figure 6 provides a simple classification of the various network designs. For more information about the taxonomies of neural networks see Caudill and Butler (1992); Kosko (1992); and Lawrence (1993).

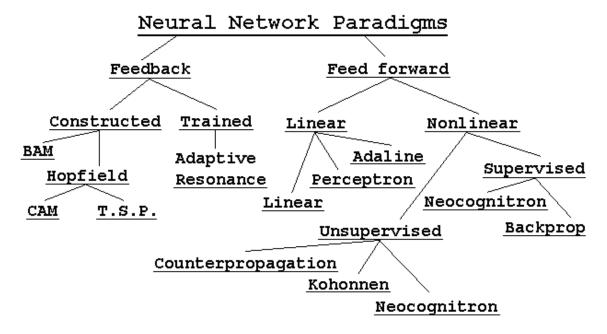


Figure 6. Neural network paradigms (Lawrence 1993)

A network architecture is selected according to the particular application or problem to be solved. Different designs have specific capabilities, advantages and disadvantages. The backpropagation network used in this research is a supervised, fully connected feed-forward type like that shown in Figure 7.

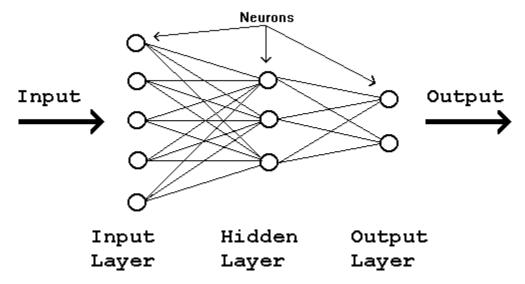


Figure 2-7. A fully connected feed-forward network

A typical feed-forward network contains an input layer of neurons, one or more hidden layers, and an output layer. In most classification, optimization, and prediction applications, the number of input neurons corresponds to the number of predictor or independent variables. The number of output neurons corresponds to the number of criterion or dependent variables to be estimated by the network. For backpropagation, no quantitative criterion for the determination of the optimum number of hidden layers or neurons in each hidden layer has been generally recognized (Kosko, 1992).

In practice, such networks rarely contain more than two hidden layers, with one being most common. Finding the right number of hidden layers and neurons involves a process of "tuning," in which various architectures and network parameters are varied systematically.

Modifications proportional to changes in improved performance are retained, otherwise, adjustments are rejected and experimentation continues. This process goes on until no further performance improvements are obtained. Certain recent version software features a proprietary

network architecture optimization scheme involving the ranking and deletion of hidden neurons that contribute minimally to the objective function (NeuralWare Inc. 1994).

Neural network computer programs are intended to simulate the parallel distributed processing activities of many neurons acting simultaneously and in concert.

Massively parallel computing systems are not widely available, so almost all neural network software, including that used in selection research, employs single processor computing. Neural networks are represented computationally using linear algebra to perform vector and matrix analysis.

Neural networks estimate input-output functions using distributed encoding. Exposure to sample data iteratively changes or "shapes" the connection weight matrices between neurons resulting in a stored pattern of the underlying function. Unlike statistical estimators, neural networks do not require a mathematical model of how output depends on input, rather, they are model-free estimators.

Neural networks geometrize computation. Input variables are presented to the network as vectors in multiple dimensions. As the network is trained, the connection weights between neurons evolve to superimpose pattern or function information in a state space of large dimension. Each point in this hyperspace model defines a possible neural network configuration of connection weights.

Although a computer can function in multi-dimensional hyperspace routinely, the human mind cannot easily visualize more than three dimensions. In 1982, physicist John Hopfield noted that neural network estimation of an underlying function is mathematically similar to the phenomena of spin glasses and energy wells in physics (Hopfield 1982). This similarity provides a very useful tool for visualizing network activity as the connection weights map an underlying function.

Figure 8 illustrates the geometry of fixed point stability in neural networks. Hidden patterns in the data appear as protrusions and basins underneath a sheet draped over the "energy surface" of the data. Network activity burrows a trajectory beginning with a computational problem and ending with a computational solution. Likened to a ball bearing rolling down hill, the computational solution comes to rest when the network converges in a fixed point of equilibrium (Kosko 1992).

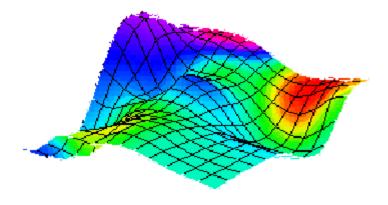


Figure 8. Computational energy surface

The computational energy surface, also called an energy sheet or a Lyapunov function, is used to represent the total behavior of physical systems and neural networks. Basins of attraction, global and local minima, convergence and other references to the energy surface are used to visually represent interactions and nonlinearity among variables. As such, they are a useful tool for interpreting neural net processing. The following section will discuss the evolution of neural network theory leading up to the backpropagation network used in selection research.

Evolution of Neural Network Theory

In 1943, biologist Warren McCulloch and statistician Walter Pitts published a mathematical theory of neural behavior that significantly influenced future research activity in digital computing, expert systems and neural processing, as well as neurophysiology (McCulloch and Pitts 1943). The classical McCulloch-Pitts neuron is a simplified model of a biological neuron. According to this early theory, internal neuron activity is governed by five principles:

- 1. Neural activity is binary (activation is either on or off).
- 2. Neurons have a fixed activation function so that any given input pattern always generates the same output.

- 3. Neuron activation is immediate, input stimulus results in output response with no delay except for that occurring in the synaptic junctions between neurons.
- 4. Any inhibitory input to the neuron will prevent it from turning on.
- 5. The connections between neurons do not change (Caudill 1990).

Although flawed as a paradigm for biological neural activity and limited in terms of problem solving ability, the McCulloch-Pitts neuron formed the basis of modern neural network theory by mathematically representing a model of neural activation that remains central to subsequent neural network designs. The McCulloch-Pitts neuron consisted of inputs, a weighting scheme, a summation function and a hard limit/step transfer function which determined what value the neuron's output would take for a given set of inputs (see Figure 2-2).

A vector of input values $(x_1...x_n)$ representing a series of data points from the outside world (or other neurons), are multiplied by a set of weights $(w_1...w_n)$ representing an excitatory or inhibitory connection between the input source and the receiving neuron. The weighted inputs are then summed. If the sum of the weighted inputs exceeds a certain threshold, the output equals one. If the threshold value is not met, the output is zero. This activation function can be expressed as:

$$n$$

$$net_{i} = \sum (w_{i,j} * o_{j})$$

$$j=1$$

where:

neti = neural output signal value for neuron i;

Wij = weight of the synaptic connection between
 neurons i and j and;

 O_j = the output of neuron j.

The net output signal value for neuron i equals the sum of the weight times the input signal for all input to neuron i from neuron j starting at output of neuron j=1 and ending at j=n (Kosko 1992).

McCulloch and Pitts demonstrated that these neurons can be used to compute logical operators (such as AND, OR, ELSE, etc.) and when linked in networks, can solve more

complex logical operations. The central problem of the McCulloch-Pitts neuron was that each set of weights for each neuron had to be calculated in advance to solve a particular problem. There was no mechanism or procedure for adjusting synaptic weights so that the network could self-adjust to solve arbitrary problems. In short, the McCulloch-Pitts neuron had no learning rule.

In 1949, psychologist Donald Hebb was seeking to explain how neurons are physically changed during learning. Hebb theorized that "when an axon of cell A is near enough to excite a cell B and repeatedly or persistently takes part in firing it, some growth process or metabolic change takes place in one or both cells such that A's efficiency, as one of the cells firing B, is increased..." (Hebb 1949). The idea that neural connections vary in strength according to how often a particular neural pathway is stimulated became known as Hebb's law and was quickly integrated into mathematical models of neural behavior, most notably by Frank Rosenblatt, a biologist at Cornell University.

Building on the work of McCulloch, Pitts and Hebb, Rosenblatt invented a model of the optic nerve of the common housefly (Rosenblatt 1958). This early class of artificial neurons was collectively known as perceptrons, and received a great deal of popular and research interest throughout the 1960's. Rosenblatt demonstrated that a network of these two-state (on/off) neurons, using a variation of Hebb's law, was capable of classifying input data, making threshold logic operations and, that a self-adjusting system could retain information and self-modify as a result of training.

Rosenblatt's perceptron learning theorem demonstrated that a perceptron could learn anything it could represent. Representation refers to the ability of a neural network to simulate a specified function. Learning requires a systematic procedure for adjusting the network weights to produce that function. Rosenblatt's perceptron training algorithm operationalized Hebbian learning theory to challenge McCulloch and Pitts' fifth rule of neural behavior which stated that connections between neurons are fixed. Rosenblatt's methodology for training a network to find the correct input weights and threshold values is summarized in Figure 9. Using this supervised training procedure, the network will modify the input weights until the network will correctly classify a group of inputs in a finite number of iterations.

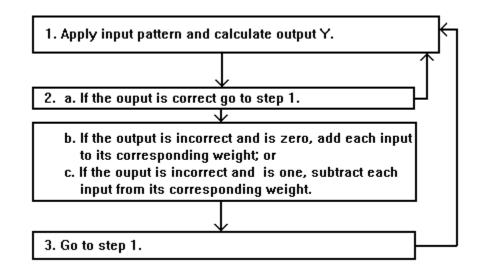


Figure 9. Summary of Rosenblatt's supervised training procedure for perceptron networks (Wasserman 1989).

In the mid-1960's, MIT professors Marvin Minsky and Seymour Papert identified an entire class of relatively simple problems that cannot be solved by a single layer perceptron network (Minsky and Papert 1969). In their book, Perceptrons, Minsky and Papert demonstrated that the perceptron is limited to functions that are linearly separable, i.e., problems in which sets of points (corresponding to input values) can be separated geometrically by a line, plane or hyperplane. Restriction to linear separability limits a single layer perceptron network to simple problems and severely limits utility with multivariate functions in which the underlying relationships are non-linear.

Two years after Rosenblatt published his work with perceptron networks, electrical engineers Bernard Woodrow and Ted Hoff patented the adaptive linear element, or ADELINE. Designed as an analog noise reduction filter for digital signal processing, the ADELINE is a single neuron with a simple additive activation function, a linear transfer function and one modifiable synapse for every element in the input pattern. The ADELINE and the multiple adaptive linear element (MADELINE), are the most commonly deployed neural network technology. They are used in echo cancellation in long distance telephone systems, real-time process control in medical and industrial applications,

computer modem communications and deep space navigation, among other applications.

With the ADELINE, Widrow and Hoff introduced a variation of the perceptron training algorithm able to process continuous inputs and outputs; the simple, but powerful, least mean square (LMS) or delta rule. The ADELINE uses a least means square (LMS) regression procedure to continuously modify the connection weight matrix to minimize the difference (delta) between the network output and the actual output variable from the training data. The delta rule minimizes overall mean squared error by multiplying the difference between the actual and desired output times the values of the inputs, times the learning rate:

$$\Delta w_{ij} = \eta(T_i(t) - a_i(t)) \circ j(t)$$

where: Δw_{ij} is the change in the weight of the connection from neuron j to neuron i, T_i is the training input or correct answer, t is the specific time, a_i is the activation for neuron i, o_j is the output of neuron j, and η is the learning rate.

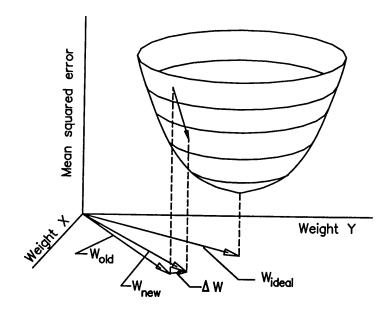


Figure 10. Gradient descent of the connection weight matrix under the Delta rule (Caudill and Butler 1990).

The delta rule is a gradient descent learning rule geometrically interpreted in Figure 10. When plotted in

two dimensions (x,y), the mean squared error versus the possible weight vectors show a parabola (a hyperparabolid in N-dimensions) (Caudill 1990). The total mean squared error is a quadratic function of the weight vector. The delta rule modifies the weight vector to minimize its mean squared error, iteratively moving the connection weight matrix down the negative gradient toward the bottom of the parabola to the ideal weight matrix, or point of LMS error.

Convergence to the global minima (weight matrix configuration showing lowest LMS error) is governed by the learning term, $\eta.$ If η is too small, the LMS algorithm crawls needlessly down each estimated squared error surface resulting in lengthy training cycles. If too large, the descent may skip over the global minima, and fluctuate between points corresponding to values larger than the minimum error surface. The learning rate should vary inversely with system uncertainty (Kosko 1992) and typically falls in the range of 0 to .6. Small values of η are recommended for high levels of system uncertainty and high dimensionality. Larger values of η can speed convergence in simpler sampling environments.

Because the delta rule requires the training term $T_{\rm i}$, representing a known correct output for each input, it cannot be applied to hidden layer neurons where the correct output value is unknown (Nelson and Illingworth 1991). Hence, the delta rule applied only to single layer neural networks or the output layer of multi-layered nets. The problem of linear separability in pattern representation also applied to the ADELINE. The backpropagation learning rule overcame this barrier.

Backpropagation Neural Networks

The backpropagation training algorithm, also called the generalized delta rule, is a nonlinear extension of the LMS algorithm. Overcoming the limitations of the perceptron and adeline/madeline technology, backpropagation was hailed as a computationally efficient way to train multi-layered networks to represent nonlinearly separable pattern functions. Backpropagaton reawakened research interest in the capabilities and behavior of neural networks after the hiatus following the publication of Perceptrons.

The origin of backpropagation mathematics has been traced to the stochastic approximation learning theory

literature of the 1950's (White 1989). Werbos (1974), published the theorem as "dynamic feedback" in his Harvard University dissertation in political science and applied it in political forecasting. Parker (1982) derived the same equations as "learning logic" in a product licensing report for Stanford University in 1982. Y. Le Cun (1986) is also commonly cited as a co-inventor of backpropagation. Rumelhart, Hinton and Williams (1986) popularized the generalized delta rule in the Parallel Distributed
Processing volumes of the late 1980's and ensured a broad interdisciplinary audience for neural networks.

Backpropagation networks are hierarchical, feed forward designs with summative activation, a nonlinear transfer function and a supervised, gradient descent training algorithm. A typical backpropagation network consists of an input layer, one or more hidden layers, and an output layer as shown in Figure 2-11.

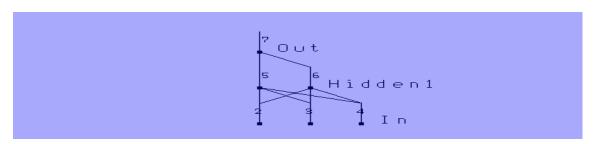


Figure 2-11. A simple backpropagation network

Training the Backpropagation Network

The term backpropagation refers to how the network is trained. Like the adeline and the perceptron learning procedures, the generalized delta rule also contains an error term used to teach the network if its output is correct or not. The training process consists of a forward pass of the data, in which the network processes a single input vector, updates the connection weights between neurons and produces an output. This is followed by a backward pass of the data beginning at the output layer. An error term, representing the difference between the actual and the desired output, is passed back (backpropagated) through the network as a partial derivative of the transfer function. A vector of transformed error values becomes the error term for the previous layer successively until the first layer is

reached. The effect of the backpropagated error adjustment is to recursively attenuate the proportional error contribution of the connection weight matrix layer by layer. Rumelhart, et al., described the backpropagation procedure in the following steps. The rule for changing the weights between input/output pair P is given by

$$\Delta_{pWji} = \eta(T_{pj} - O_{pj})X_{pi} = \eta\epsilon_{pj}X_{pi}' \tag{1}$$

where; η is a scalar constant called a learning coefficient which determines the rate at which the connection weights are modified, T_{pj} is the desired output for the jth component of the output pattern for pattern p, O_{pj} is the jth element of the actual output pattern produced by the neural network for the input pattern p, X_{pi} is the value of the ith element of the input pattern, the error term ϵ_{pj} = T_{pj} - O_{pj} , and $\Delta_p W_{ji}$ is the change to be made to the weight from the ith to the jth element following presentation of pattern P.

As a gradient descent algorithm, the goal of training using the generalized delta rule is to minimize total mean squared error E by adjusting all W's (connection weight matrices) for each input/output pair. The amount of the adjustment is determined by the derivative of the error function as follows. Let the measure of error for input pattern P be

$$E_p = constant \sum (T_{pj} - O_{pj})^2$$
 (2)

so the adjustment to the weight from the ith to the jth element of pattern P is given by

$$\Delta_{p}W_{ji} = -(constant) * (\delta E_{p}/\delta W_{ji}).$$
 (3)

A nonlinear transfer function is one in which the output of a neuron in the output layer is a continuous function of its input or

$$O_{pj} = F_{j}(NET_{pj}) \tag{4}$$

and Fj is differentiable and non-decreasing. The error term for an output neuron (ϵ_{pj} out) is given by

$$\epsilon_{pjout} = (T_{pj} - O_{pj})F_{j'}(NET_{pj})$$
 (5)

where $F_{j'}(NET_{pj})$ is the derivative of the nonlinear transfer function, which maps the total input to the unit to an output value.

If the neuron is hidden or in the input layer, its error signal is determined by

$$\varepsilon_{\text{pjin}} = F_{j'}(\text{NET}_{\text{pj}}) \Sigma \varepsilon_{\text{pk}} W_{kj}.$$
 (6)

For the sigmoid transfer function in which

$$O_{pj} = 1/(1 + e^{-netpj}),$$
 (7)

the derivative is given by

$$\delta O_{pj}/\delta NET_{pj} = O_{pj}(1-O_{pj}). \tag{8}$$

For the hyperbolic tangent transfer function in which

$$O_{pj} = (e^{\text{netpj}} - e^{-\text{netpj}})/(e^{\text{netpj}} + e^{-\text{netpj}}), (9)$$

the derivative is given by

$$\delta O_{pj}/\delta NET_{pj} = 4/(e^{netpj} + e^{-netpj})^2$$
 (10)

Thus,
$$\varepsilon_{pjout} = (T_{pj} - O_{pj})O_{pj}(1-O_{pj})$$
 (11)

and,
$$\varepsilon_{pjin} = O_{pj}(1-O_{pj}) \Sigma \varepsilon_{pk} W_{kj}$$
. (12)

The connection weights are then updated using:

$$W_{ji}(new) = W_{ji}(old) + \eta * \epsilon_{pj} * O_{pi}.$$
 (13)

A common modification to the generalized delta rule includes the use of a scalar constant known as a momentum term (α) , shown as:

$$W_{ji}(new) = W_{ji}(old) + \eta * \epsilon_{pj} * O_{pi} + W_{ji}(old) * \alpha(14)$$

The momentum term helps smooth the local curvature between successive squared error surfaces and in some cases will prevent convergence in a local minimum. Non-convex ridges in the energy surface are like gullies on the side of a hill. Local minima can trap the network in equilibrium at a point higher than the global minimum mean squared error. Further discussion of the backpropagation derivation can be found in (Rumelhart, et al. 1986; Kosko 1993).

To summarize, backpropagation training of a nonlinear neural network is an iterative procedure involving six steps:

- 1. Apply the input vector to the network input.
- 2. Compute the output of the network.

- 3. Compare the network output to the desired output.
- 4. Compute the error between the network output and the desired output.
- 5. Adjust the weights of the network proportionally to the error contribution of each weight, minimizing aggregate squared error.
- 6. Repeat steps 1 through 5 for each vector in the training set until the error for the entire set is acceptably low.

The effect of backpropagation is to minimize the aggregate mean squared error between the network's output and the known sampled independent variable. The adjustment to the connection weight matrix is determined by the derivatives of the error function proportional to the error contribution of each weight.

Testing the Trained Network

When the network has been trained to a point of convergence on the training deta, it is tested using a second set of input/output pairs that the network has not been exposed to previously. The testing data is normally a partitioned subset of the total sample from which the training data also originates. Both training and testing samples should be representative, non-overlapping samples of the universe of potential input/output pairs that the network will process in the intended application. The use of separate, but similar training and testing data is comparable to using a development sample and a hold out sample in regression-based modeling.

During testing, learning is disabled. The connection weight matrix, presumably has mapped the underlying function and is held static as it processes the new inputs. The network's predictions can then be compared to the actual or desired output of the second data set to assess the network's performance. Unlike backpropagation training, however, no modifications to the network are made with the testing data set.

Testing the network's ability to generalize what it has learned on the training set to the new information in the testing set is the primary way to evaluate the network's performance. The following statistics are typically used to assess how well the network is modeling the underlying function:

- 1. The product moment correlation between the network's output and the known independent variable(s).
- 2. The summed absolute error.
- 3. The sum of the absolute error squared.
- 4. The root mean squared error.
- 5. The average absolute error
- 6. The standard deviation of the error.

Using these measures allows the analyst to track the performance of individual networks during training and families of networks during network development and optimization.

Backpropagation training of nonlinear neural networks has been reduced by White (1989) to a special case of stochastic approximation. Kosko (1992) has also pointed out that backpropagation is but one of many possible gradient descent algorithms and speculates that future gradient descent networks may "burrow through, hop over, contract, vibrate or flatten the unknown mean error surface". For more information about supervised learning algorithms, stochastic approximation and backpropagation see Barto and Anandan (1985); Pineda (1989); Aparicio and Levine (1993) and Hassoun (1993). Backpropagation remains a computationally practical model free estimator, but it is not without its drawbacks.

Problems with Backpropagation

Backpropagation networks are slow to train, requiring hundreds, more commonly thousands, of exposures to the training data set before convergence. This slows down the model development process and precludes real-time simultaneous learning and processing of new data. For the connection weight matrix to be modified, the system must be taken off-line and retrained, tested, optimized, etc., before returning to application service. In time sensitive applications, backpropagation may be time/cost prohibitive. Various heuristics for improving training times have been described (Jacobs 1988; Caudill 1991; Tveter 1991; Garavaglia 1993). Most involve modification of learning rates, the network architecture, and adjustments to how often the connection weights are updated after processing each input (also called the epoch size).

Because backprop networks are trained with non-local data, i.e. sampled as opposed to actual current input, it

is essential that the sampled variance be representative of the population and function being modeled. Sampling error can contaminate the neural model just as it can foul a regression or any multivariate modeling procedure.

As described earlier, backpropagation and gradient descent algorithms in general, are at constant risk of convergence in a local minima. Trapped in a local minima, the network stops learning and fails to find the connection weight matrix with the least mean squared error. Increasing the momentum term, lowering the learning rate, retraining the network from a different set of initial connection weights, increasing the number of hidden neurons, and adding a bias term (random noise factor) to the input vector are commonly cited procedures for avoiding local minima (Caudill 1991; Guiver and Klimasauskas 1991; Lawrence 1993).

A final, and substantial, problem with neural network development is the lack of quantitative guidelines concerning network design. As mentioned previously, network architecture, learning and momentum rates, transfer functions, data scaling, and other problemspecific technical parameters directly effect the success of neural model development and depend entirely on the expertise of the analyst. Assuming appropriate design decisions are made, the process of optimization will lead to a successful neural network application.

Network Optimization

Another structured approach to network optimization has been described that offers some guidance in design and optimization. Genetic algorithms, also called evolutionary neural networks, use a structured procedure for network design optimization based on the theory of evolutionary survival of the fittest (Caudill 1991; Hedberg 1994; Murray 1994).

The genetic selection design approach involves the development of a "population" of neural networks with different technical parameters designed to model the same pattern function. Network parameters that can be numerically compared (number of hidden neurons, learning rate, momentum term, etc.) are assigned values that maximize heterogeneity within the population. Using the genetic concepts of mutation, recombination, fitness and diversity, successive generations of networks are developed and subjected to fitness (survival) testing. Eventually, certain "families" of networks begin to outperform all

others on the fitness criterion and from this population subset, one or more optimized networks emerge.

The Monte Carlo optimization scheme, also facetiously called the "wild guess" approach (Murray 1994), consists of randomly selecting network parameters and initial connection weights until a satisfactory network converges. In applications where speed is more important than accuracy, the Monte Carlo approach might be appropriate. This research employed an optimization scheme that falls somewhere between gambling with the Monte Carlo approach and neural Darwinism.

Unlike the genetic approach, which comprehensively adjusts and tests many networks in generational succession, "hill climbing" optimization begins with a smaller set of networks designed using heuristics or rules of thumb gleaned from experience with network design and published in the technical literature. Hill climbing is an iterative optimization procedure that tests incremental changes in network parameters, testing the adjusted network and retaining those changes that result in improved network performance. The process continues until additional parameter adjustments result in no measurable performance gain.

The problem with hill climbing optimization is that it does not involve a systematic search of the total error surface for the absolute minimum error matrix and hence, the tuned network may "climb the wrong hill" and converge short of the global minima. Even so, the hill climbing optimization scheme recognizes development time constraints without an extreme sacrifice of technical rigor.

Updated Reference List

Aggarwal, A.J., Travers, S.D., & Scott-Conner, C.E. (2000). Selection of surgical residents: A neural network approach. Cybernetics and Systems: An International Journal, 31,417-430.

Chambless, B. and Scarborough, D. (2001). "Information theoretic feature selection for a neural behavioral model". *Proceedings of the International Joint Conference on Neural Networks of the IEEE*, Washington D.C.

Collins, J.M., & Clark, M.R. (1993). An application of the theory of neural computation to the prediction of workplace behavior: An illustration and assessment of network analysis. <u>Personnel Psychology</u>, 46, 503-524.

Depsey, J., Folchi, J., & Sands, W. (1995). <u>Comparison of alternative types of prediction models for personnel attrition</u>, (HumRRO FR-PRD-95-05).

Dickieson, J., & Wilkins, C. (1992). An exploratory examination of artificial neural networks as an alternative to linear regression. <u>Independent Research and Exploratory Development Programs: FY91 Annual Report,</u> (Navy Personnel Research & Development Center-19-92-5, 65-71).

Sands, W. A. (1992). Artificial neural networks: A tool for psychologists. <u>Proceedings of the 33rd Annual Conference of the Military Testing Association</u>, <u>San Antonio</u>, <u>Texas</u>.

Garson, D. G. (1991). A comparison of neural network and expert systems algorithms with common multivariate procedures for analysis of social science data. *Social Science Computer Review*, *9*, 399-434.

Garson, G. D. (1998). *Neural Networks: An Introductory Guide for Social Scientists*. Thousand Oaks, CA: Sage Publications.

Kirby, E., Kwon, O., Dufner, D., & Palmer, J. (1998, August). An analysis of applying artificial neural networks for employee selection. Paper presented at the Social Informatics and Information Systems Forum of the Americas Conference on Information Systems, Association for Information Systems, Baltimore.

Leslie, L. M., & Hanges, P. (2005, April). *Factors affecting the utility of artificial neural networks*. Poster presented at the annual meeting of the Society for Industrial and Organizational Psychology, Los Angeles, CA.

Ostberg, D. (2005). A comparative analysis of artificial neural networks, classification trees and multivariate linear regression for predicting retail employee tenure and turnover. Doctoral dissertation, University of Portland.

Palocsay, S., & White, M. (2004). Network modeling in cross-cultural research: A comparison with multiple regression. Organizational Research Methods, 7, 389-399.

Sands, W. A., & Wilkins, C. A. (1992). A comparison of artificial neural networks and linear regression for dichotomous criterion prediction. <u>Proceedings of the 34th Annual Conference of the Military Testing Association, San Antonio, Texas,</u> 73-78.

Sands, W. A., & Wilkins, C. (1991). Artificial neural networks for personnel selection. <u>Proceedings of the 33rd Annual Conferenc of the Military Testing Association</u>, 389-92.

Scarborough, D. (1995). <u>An evaluation of backpropagation neural network modeling as an alternative methodology for criterion validation of employee selection testing.</u> Doctoral dissertation, University of North Texas, Denton, Texas.

Scarborough, D. (1996). Tutorial on the use of neural networks for personnel selection. *Theory and Applications: Proceedings of the Decision Sciences Institute Southwest Region*, 27th Annual Conference, pp. 151-153. San Antonio.

Scarborough, D. & Somers, M.(2001), Leveraging New Technology: Using artificial neural networks for applied problem solving in employee selection," Pre-conference workshop, SIOP, San Diego, 2001.

Scarborough, D., & Somers, M. (2002, April). Dust bowl empiricism on steroids: A data mining approach to employee selection. In (P. Hanges), "The real AI: Artificial neural networks, statistics and psychological theory". Symposium conducted at the annual meeting of the Society for Industrial and Organizational Psychology, Toronto, Ontario, Canada.

Scarborough, D. & Somers, M., (2006). *Neural Networks in Organizational Research: Applying pattern recognition to the analysis of organizational behavior*, APA Books Inc., Washington D.C. http://www.apa.org/books/4316077.html

Scarborough, D. & Somers, M.(2008), Update on the use of artificial neural networks in I/O Psychology. Master Tutorial, Society for Industrial and Organizational Psychology, San Francisco.

Sederburg, M., Stanton, J., & Smith, P. (2000). <u>Applying neural networking techniques to prediction problems in I-O Psychology</u>. Poster session presented at the Society for Industrial and Organizational Psychology 15th Annual Conference, New Orleans.

Somers, M.J. (2000). <u>Self-Organizing Maps and Commitment Profiles.</u> Poster session presented at the Society for Industrial and Organizational Psychology 15th Annual Conference, New Orleans.

Somers, M.J. (1999). Application of two neural network paradigms to the study of voluntary employee turnover. <u>Journal of Applied Psychology</u>, 84, (2), 177-185.

Somers, M. J. (2001). Thinking differently: Assessing nonlinearities in the relationship between work attitudes and job performance using a Bayesian neural network. *Journal of Occupational and Organizational Psychology*, 74, 47<en>62.

Somers, M.J. & Casal, J.C., (2006). Using artificial neural networks to model nonlinearity: The case of the job satisfaction-job performance relationship. Organizational Research Methods, accepted for publication, date of publication not available.

Thissen-Roe, A. (2005). Adaptive selection of personality items to inform a neural network predicting job performance. Doctoral dissertation, University of Washington.

Thissen-Roe, A., Scarborugh, D., Chambless, B. & Jetton, M. (2005). "A computerized assessment system to predict the performance of sales associates." Submitted to *Behavior Research Methods*, paper presented at the Psychonomic Society Annual Conference, Toronto.

Thissen-Roe, A.; Scarborough, D.; Chambless, B. & Hunt, S. (2006) "Inadvertent honesty: occurrence and meaning of applicant faking in unproctored personality tests". Paper presented at the annual meeting of the Society for Industrial-Organizational Psychology (SIOP), 5/2006, Dallas, TX.

Walker, I., & Milne, S. (2005). Exploring function estimators as an alternative to regression in psychology. *Behavior Research Methods*, *37*, 23<en>36.

Excerpt from:

Scarborough, D. & Somers, M. (2006). <u>Neural networks in organizational research:</u> <u>Pattern recognition applications in organizational behavior</u>, APA Books. Washington

Why use neural networks in organizational research?

Behavioral scientists working in organizations today have access to unprecedented amounts of data. Networked computing and software tools are changing the landscape of organizational research in fundamental ways. Information technology facilitates creation of vast amounts of data. In organizational research, on-line surveys, interactive interviews, computer-based assessment and other digital tools have become a preferred medium for collecting self-report and opinion data. Political polling, marketing surveys, employee selection and placement, educational assessment and other kinds of research can be completed faster than ever at a lower cost with targeted access to specific populations. Because source data is entered directly into the medium of analysis, transaction costs of electronic data collection have declined while data quality and yield have increased as user-interface design has improved (Howell, 1991).

Other unobtrusive, non-traditional sources of behavioral observation data are coming into use. Measures of on-line behavior and databases maintained by corporations and government agencies for other purposes can be a useful source of research data.

Small sample size, a primary source of error in social research, is less of a problem for researchers working with on-line data sources.

Concurrent with expanding data availability, our analytic capability and processing capacity has improved dramatically. New and better statistical software has evolved to accommodate the needs of researchers challenged by vast data resources. One

permutation of this evolution is the recent appearance of computationally intensive methods only recently enabled by spectacular gains in processing speed. These "brute force" computational techniques were often developed to solve highly complex problems in the physical sciences and are now migrating into the tool kit of organizational research. Artificial neural networks comprise one class of these powerful new tools.

An artificial neural network is a statistical model comprised of simple, interconnected processing elements that are configured through iterative exposure to sample data. Artificial neural networks or ANNs were originally developed as mathematical theories of the information processing activity of biological nerve cells. As a result of this history, the structural elements and vocabulary used to describe ANNs have conceptual analogs from neuroscience ¹ despite their general acceptance as a class of statistical procedures. A summary of this history is presented in Chapter 3.

Continuing briefly with the biology metaphor; artificial neural networks form internal representations (mathematical models) of the external world (a sampled function) in response to exposure to stimuli (sample data). ANN's "learn" in the same sense that a fitted regression equation has "learned" a sampled function. Through multiple exposures to sample data, structural elements within the network are reconfigured to approximate distributions, associations and other features of the data.

Like a fitted regression function, a trained neural network can generalize pattern information (apply learning) to new data. For example, a neural network trained with assessment responses and job performance measures from an employee sample can be used to estimate the job performance of applicants based on their responses to the same

assessment. In that application, neural network output is interpreted as the test score just as with a regression scoring model.

Perhaps the most significant difference between neural and statistical modeling is the method used to derive the functional model. The statistician pre-defines, iteratively tests and selects the best of the hypothesized objective functions to derive a final model. Developing a neural model involves preparing data for presentation to the network, selecting a training regime (the learning rule), configuring the initial layout of neurons (the network architecture) and then monitoring training progress until a satisfactory model converges. This is always an iterative process in which results from successive training cycles inform modifications to the network or the training regime while repeating the process. Heuristics for these procedures are described in Chapter 4. Experienced statisticians may wonder why one would go to such trouble.

Why use neural networks for organizational research?

To answer this question, the following discussion will draw from the experience of other disciplines that have adopted neural network modeling procedures, as well as research by behavioral scientists working with ANNs in academia and organizations. ANNs have advantages for solving certain kinds of research problems. In addition, ANNs have other properties that support their use in applied research as discussed below.

The most significant departure of neural network analysis from conventional analysis is that neural model development is relatively unconstrained by researcher expectations compared to the defined parameters of *anticipated* functional relationships inherent to hypothesis testing. Neural network analysis does not require or yield individual hypothesis confirmation. A trained neural network's output and structure is used to make inferences about associations, interactions, non-linearities and other

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¹ Examples of biological nomenclature inherent to neural network analysis include labeling processing elements as "neurons" and describing the algorithms used to update connections between neurons as

characteristics of the data. If such inferences are accurate, they can be replicated across multiple networks and samples and confirmed using conventional procedures. The important point here is that ANNs can help us uncover structural elements in research data that we may not have known of or thought to look for. This includes surfacing meaningful relationships in addition to spurious ones. Discerning useful and theoretically meaningful network behavior from sample-specific *noise* is one of the challenges of neural analysis. Fortunately, conventional modeling procedures, sampling strategies and heuristics specific to neural modeling are available for interpreting neural network output and behavior.

Even though the neural modeling approach does not require theoretical specification, the use of any general function simulator² for behavioral analysis and prediction increases the need for a coherent theoretical approach and rigorous methodology. Knowledge of likely predictive associations, reliable construct measurement and scaling, pre-analytic power analysis and other features of well-structured research are just as critical to neural model development as they are to conventional modeling.

When should neural networks be used?

Themes introduced below are discussed in more detail in later chapters. They are presented here to introduce a rationale for using ANNs and the conditions under which they are most likely to add value to a research project. Considerations for applying ANNs in theoretical research are followed by a discussion of factors related to

'learning rules."

² ANNs are one of several different curve fitting procedures including polynomial regression, multiple regression splines, neuro-fuzzy inference systems, genetic algorithms and radial basis functions (Friedman, 1991; Hastie, Tibshariani, and Friedman, 2001; Westbury et.al., 2003)

operational use of ANNs. In general, when one or more of the following conditions are present in a research project, neural network analysis may have value in concert with or even in lieu of conventional multivariate analysis.

When sample data shows high dimensionality, multiple variable types, complex interaction effects or does not meet parametric assumptions

ANNs are nonparametric function simulators. Unlike modeling procedures derived from the general linear model, ANNs can be used to model data sets that would otherwise violate statistical assumptions of normality and/or linearity. Assuming sufficient sampling and proper training, ANNs will fit a sampled distribution accurately and are thus useful for modeling data with unknown distributional characteristics (Walker and Milne, 2005). ANNs do not require independence among variables and will model significant interactions between variables. This characteristic of ANNs is discussed further in Chapter 4 introduces the mathematics of backpropagation training and explains how neural networks map relationships in sample data using gradient descent optimization³.

When evaluation of alternative models is required

ANNs can provide a useful benchmark for evaluating other types of models, linear or non-linear. Most neural network software programs include utilities for scaling, data cleansing, feature selection and automated model creation and testing. These tools allow researchers to efficiently create families or *ensembles* of neural networks that vary by architecture, learning rule, convergence conditions, and other parameters. This type of

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³ Backpropagation is the process by which error values (the difference between predicted and actual outcomes) are used to modify the connections between neurons in trained neural networks. It is the most commonly used ANN gradient descent algorithm and one of many computational approaches to minimizing error between a function approximation and sample data (Kosko, 1992).

brute force computational attack can provide reasonable initial estimates of model fit that might be obtained using other modeling approaches on a given dataset. Other information on the extent of non-linearity, interactions and generalizability can be gleaned as well.

In addition to exploratory estimates of model fit, the performance of optimized neural models can be compared directly with that of conventional models. In many instances, a fully specified conventional model that maps the underlying function to a theory-based explanation is required. If neural model fit is significantly better than that of the specified model, this may indicate that the model is incomplete or that some functional relationships are not being represented accurately. The model fit of an optimized neural network that generalizes to independent data reliably can be viewed as a reasonable approximation of the explainable variance in a data set. When a specified formal model approximates the fit of an optimized neural network (or better, an ensemble of neural networks), this can be viewed as one form of corroboration of the specified model. Chapter 6 provides a review of the literature of research comparing ANNs to familiar multivariate procedures in organizational research.

When relationships between independent and dependent variables are weak and unexplained variance is large.

Behavioral scientists have access to a wide range of tools for measuring attitudes, beliefs, traits, abilities, preferences and other individual differences that have utility for theory development and testing, behavioral prediction, program evaluation, population segmentation and other research objectives. In Chapter 4, we discuss low effect size and poor model fit as possible symptoms of the limitations and unquestioned assumptions

inherent to commonly used multivariate methods. ANNs compliment existing methods by improving detection and description of nonlinearities, interaction effects and other complexities in sample data. As such, ANNs have a useful role to play in theory testing and refinement.

When the research application supports or requires the use of data mining procedures.

In applied settings, data mining is the growing practice of applying exploratory and confirmatory analysis to large-scale databases to uncover useful relationships embedded therein (Ye, 1998). In Chapter 6, the use of criterion valid employee selection models developed using data sources created for other purposes is described. Cost-efficient predictor content can be derived from employment applications and assessment records collected via computer networks. On the criterion side, payroll data containing length of service, termination records, promotion/demotion activity, compensation changes and other data can be scaled to reflect meaningful performance differences among workers. Other potentially useful sources of performance criteria include records of sales and commission data, unit production, service transactions, accidents and disciplinary records, performance appraisal ratings and other quantifiable measures of job performance that can linked to specific employees for whom matching predictor data is available.

In data mining, very large sample size and very low data acquisition costs are offset by variable data integrity and little experimental control over data collection.

Opportunistic data mining is a scavenger's game and numerous caveats apply. Careful examination and pre-processing of opportunistic validation data should precede any attempt at modeling. Feature selection, choosing the right set of predictor variables, is

challenging because such data was collected for purposes other than behavioral research. In this type of validation project, characterized by large sample size, noisy predictor and criterion data, minimal theoretical grounding, limited experimental control and exclusively electronic model processing, a neural network may be the only viable modeling choice.

When the theoretical basis of prediction is ambiguous or poorly understood

In employee selection research, some criterion valid predictors of job effectiveness are based on scientific theories that are still evolving. A good example of this is the use of standardized measures of biographic facts related to life history, work experience, etc. often referred to as *biodata* (Nickels, 1994). Well-designed biodata predictors can provide robust prediction when validated locally but often do not generalize across multiple work settings, even for similar jobs. Several competing theories have been advanced to explain biodata validity and utility however, the generalizability problem remains the subject of on-going debate and research (Mumford, Snell and Rieter-Palmon, 1994). Ambiguity or absence of a sound theoretical model explaining how and why a predictor set should relate to available criterion measures is, in our opinion, a reasonable methodological justification for applying a neural modeling procedure.

When operational use of the predictive model requires high fault tolerance

Electronic survey data collection is administered by software controls and userinterface design instead of human proctors. The loss of environmental control over unproctored completion of electronic questionnaires simultaneously increases sample size and response pattern variation. Internet applicant populations are in theory unlimited by geographic constraints and show wider linguistic and cultural variation. Differences in education, motivation, reading ability, computing dexterity and many other factors contribute to response variability. Additional threats to data integrity are inherent to the computer medium. Software glitches, hardware failures, network traffic, and other factors can degrade digital data and further increase the variability of applicant data from on-line sources.

In Chapter 5 the findings of Collins and Clark (1993), Garson (1991) and Sederburg, Stanton and Smith (2000) are described in which data integrity was systematically degraded to compare performance decline between various neural networks and a variety of statistical models. The ability of neural networks to produce reasonable estimates using noisy and missing input variables is a significant advantage over more brittle modeling procedures⁴ for processing complex unrefined data of variable quality in real- time applications.

High fault tolerance and graceful degradation of model accuracy are two properties of neural network models that have speeded their deployment in various engineering applications with high noise input data. Nuclear energy production, refinery control systems, voice and image recognition and signal processing involving large dimension, non-linear complex streaming data sources were among the first neural network applications (Caudill & Butler, 1990; Glatzer, 1992; Schwartz, 1992). In our opinion, a similar technology transfer will occur in real-time processing of behavioral

⁴ Brittleness refers to the fault tolerance of a predictive model. Multivariate regression, discriminant and quadratic model accuracy degrades rapidly or fails when one or more independent variables presented to the model is noise (for example a missing value or a random value of unexpected magnitude or valence). Neural networks encode functional relationships across a dispersed connection weight matrix. The effects of missing or unexpected input variables are dispersed within the network causing degradation of model performance without catastrophic failure.

data. Criterion valid neural models in operational use for on-line employee selection systems are described in Chapter 7.

When conventional modeling is unnecessary or cannot be completed under operational time constraints.

We anticipate organizational research applications in which speed of model development will become a competitive or security advantage. In such applications, rapid deployment of generalized prediction or classification has priority over the need to specify and explain the objective function. ANN procedures developed to detect fraudulent credit card activity have been deployed in proprietary applications to detect transaction patterns associated with employee theft on point of sale systems. These and other potential applications of neural network techniques are discussed in Chapter 10.

References

- Collins, J.M., & Clark, M.R. (1993). An application of the theory of neural computation to the prediction of workplace behavior: An illustration and assessment of network analysis. *Personnel Psychology*. <u>46</u>, 503-524.
- Friedman, J. (1991. Multivariate adaptive regression splines. *Annals of Statistics*, 19, 1-141.
- Garson, D. G. (1991). A comparison of neural network and expert systems algorithms with common multivariate procedures for analysis of social science data. <u>Social</u> Science Computer Review, 9, (3), 399-434.0

- Kosko, B. (1992). Neural Networks and Fuzzy Systems: A dynamical systems approach to machine intelligence. p.189-193. 1st ed. Englewood Cliffs, NJ: Prentice-Hall Inc.
- Hastie, T., Tibsiranie, R. & Freidman, J. (2001). *The elements of statistical learning:*Data mining, inference and prediction. New York: Springer-Verlag.
- Mumford, M., Snell, A. & Reiter-Palmon, R. (1994). Personality and background data:
 Life history and self-concepts in a n ecological system. In Garnett, Stokes &
 Owens eds. (1994) *Biodata Handbook: Theory, research, and use of biographical information in selection and performance prediction.* Palo Alto, CA: Consulting Psychologists Press. p. 583-616.
- Nickels, B. (1994). The nature of biodata. In Garnett, Stokes & Owens eds. (1994)

 Biodata Handbook: Theory, research, and use of biographical information in selection and performance prediction. Palo Alto, CA: Consulting Psychologists

 Press. p. 1-14.
- Stanton, J., Sederburg, M., & Smith, P. (2000). <u>Applying Neural Networking Techniques</u>
 to Prediction Problems in I-O Psychology. Poster presented at the annual meeting of the Society for Industrial-Organizational Psychology, New Orleans, LA
- Walker, I. & Milne, S. (2005). Exploring function estimators as an alternative to regression in psychology. *Behavior Research Methods*. 37: 23-36.
- Westbury, C., Buchanon, L., Sanderson, M., Rehmtulla, M. & Phillips, L. (2003). Using genetic programming to discover nonlinear variable interactions. *Behavior Research Methods, Instruments and Computers*. 35: 202-216.

Ye, N. ed.(2003). *The Handbook of Data Mining*. Mahwah, NJ: Lawrence Erlbaum Associates



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Candy Parker cparker@dtic.mil 703.767.7039

Karen Nimerick knimeric@dtic.mil 703.767.9072



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- ➤ To become familiar with the mission of the Defense Technical Information Center (DTIC)
- ➤ To become familiar with DTIC's online systems and information resources
- > To learn search tips to retrieve information
- To create bibliographies and alerts/saved searches



Outline for Sessions 1 & 2

Session 1

- Defense Technical Information Center (DTIC)
 - > Mission
 - > Registration
 - > Overview of online systems and information resources
- Tips to Start You Searching (Private STINET)

Session 2

- What's new at DTIC
 - > DTIC Online Access Controlled (DOAC)
 - > DoDTechipedia
- Create bibliographies and alerts/saved searches



Session 1

Session 1

- Defense Technical Information Center (DTIC)
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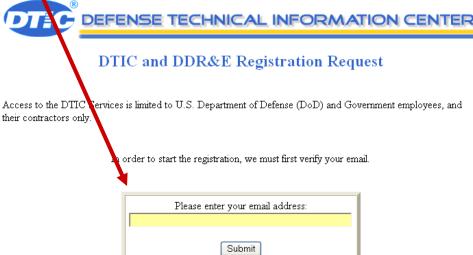
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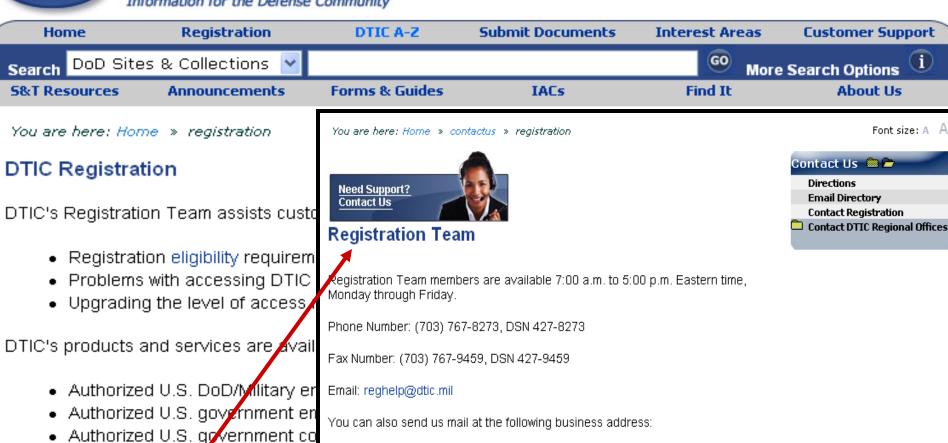
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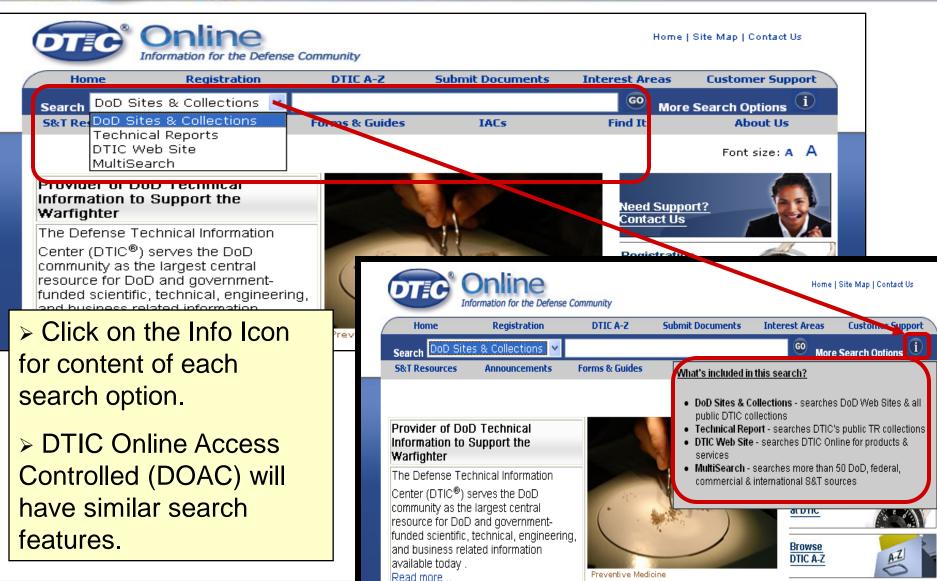
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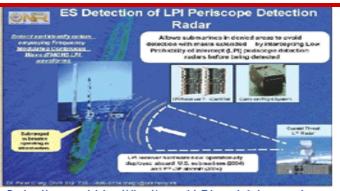
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Clusters	Nanotechnology in medicine 2006-01-01	EurekAlert!
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Topics ■ Nanotechnology	✓ ★★★★ Nanotechnology and medicine.	drive a new innovation economy for the US?
Research (114) Science and Technology	Emerich, Dwaine F; Thanos, Christopher G Sertoli Technologies, Inc, 245 Armington Street, Cranston, RI 02905, USA. ED3FJM@aol.com 2003-01-01	2009-03-03 The current economic
(95)	MedPilot WorldWideScience	downturn highlights the importance and
National Laboratory (80) Biology and Medicine (63) Annual Report (52)	Manotechnology in Advanced Medicine. YOKOYAMA MASAYUKI (Tokyojoidai Sentanseimeiikaken) OKANO TERUO (Tokyojoidai Sentanseimeiikaken) 2002-01-01	challenges of building a new 21st century "innovation economy" for America. To move beyond the current crisis, we need to retain and create
More	Biotherapy (Tokyo) VOL.16; NO. 2; PAGE. 113-121; WorldWideScience	advanced
Authors None (25)	Nanotechnology for Biology and Medicine Silva, Gabriel 2006-01-01	Stimulus debate highlights need for focus on nanotech risks
Rennie, G. (12)	WorldWideScience	2009-02-11
Stevens, F. J. (9) Trehotich, D. (8)	Nanotechnology in regenerative medicine VANATO MARRAVIII/(destruction of River disable Foreign and River disable Foreign	The nearly \$800 billion stimulus package being

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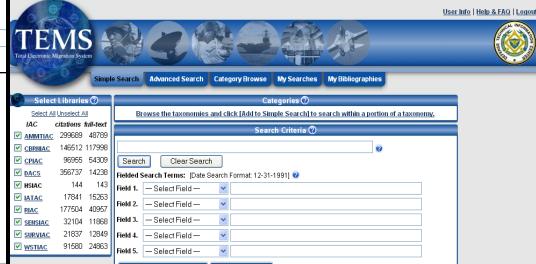
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061300 - MICROBIOLOGY

060800 - FOOD, FOOD SERVICE AND NUTRITION

150603 - CHEMICAL, BIOLOGICAL AND RADIOLOGICAL WARFARE

Corporate Author:

AUBURN UNIV AL

Unclassified Title:

(U) Phage-Coupled Piezoelectric Biodetector for Salmonella Typhimurium

Title Classification:

Unclassified

Descriptive Note:

Doctoral thesis

Personal Author(s):

Olsen, Eric V.

Report Date:

Aug 2005

Media Count:

323 Page(s)

Cost:

\$14.60

Report Number(s):

CI04-1238

XC-AFIT

Monitor Acronym:

-XC

Monitor Series:

AFIT

Report Classification:

Unclassified

Distribution Statement:

Approved for public release; distribution is unlimited.

Descriptors:

(U) *BIOLOGICAL DETECTION, *IMMUNOASSAY, *SALMONELLA TYPHIMURIUM, QUICK REACTION, PROTEINS, FOOD, PIEZOELECTRIC TRANSDUCERS, MICROBALANCES, BACTERIOPHAGES, BLOOD COUNTS, ELECTRON MICROSCOPY, BIOLOGICAL CONTAMINATION, FILAMENTS

Identifiers:

(U) *BIOSENSORS, FLOW CYTOMETRY, WESTERN BLOT IMMUNOASSAY, ELISA(ENZYME LINKED IMMUNOSORBENT ASSAY)

Identifier Classification:

Unclassified

Abstract:

(U) Salmonella typhimurium is a leading cause of foodborne illness and a critical threat agent for potential bioterrorism. Current rapid detection initiatives include biosensors that routinely incorporate antibodies for biorecognition. However, antibodies are costly and may degrade under unfavorable environmental conditions. A stable, Inexpensive substitute may be filamentous bacteriophage affinity selected from a phage display library for specificity to S. typhimurium. We immobilized affinity-selected phage to a quartz crystal microbalance for detection of S. typhimurium in solution. An ELISA procedure, precipitation assay, and flow cytometry were employed to confirm phage specificity and selectivity. The phage was up to 22,000 times more specific for S. typhimurium than controls and up to 1,000 times more selective in comparison to other bacteria. For recognition of the phage targeted bacterial outer membrane structure, biotinylated S. typhimurium surface proteins from lysate were reacted with phage cross-linked to water-soluble resin to prepare a protein cluate for Western blot, which revealed a single 60-70 kD band. Three immobilization methods (physical adsorption, biotin-streptavidin-phage selfassembly, and Langmuir-Blodgett) using two phage forms (filamentous and phage coat proteins) were evaluated for proof of concept sensor preparation. Specific binding between phage and target on the biosensor resulted in concentration dependent resonance frequency changes. Best results were obtained when 10(exp 10) - 10(exp 11) filamentous phage particles converted to spherical forms (spheroids) by chloroform denaturation were immobilized as phage coat proteins using Langmuir-Blodgett technique. In summary, filamentous phage selected from a phage library can be used for the preparation of rapid, specific, and selective biodetectors that may ultimately be suitable for continuous food and environmental monitoring devices, diagnostic assays, and biosorbents.

Abstract Classification:

Unclassified

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Activity: CASE WESTERN RESERVE UNIV CLEVEL AND OH Office Symbol/Code: AFRL/IFTC Phone Number: 315-330-2536 DSN Number: 587-2536 ming Organization: Activity: CASE WESTERN RESERVE UNIV CLEVELAND OH Component: RESEARCH ADMINISTRATION Location: CLEVELAND OH 44106 Geopolitical Code: 3921 Source Code: 402490 Organization Type: 1 - PRIVATE ACADEMIC EDUCATIONAL INSTITUTIONS ipal Investigator Information:
Name: HORTON, CHARLOTTE Office Symbol/Code: DIRECTOR RES Phone Number: 000-UNK DSN Number: 000.NA SAVINELL ROBERT sociate Investigator WAINRIGHT JESSE Contract/Grant Transfer Number Contract/Grant Effective Date: Contract/Grant Expiration Date: Contract/Grant Face Value: \$1581(Ke) Contract/Grant Cumulative to Date Total: rimary Funding Data: Program Element (PE) Number: 0603739E Program Element (PE) Number: 603739E Work Years Fiscal Year Dollars(Ks) \$527 00.0 1997 1998 \$527 00.0 \$264

EVALUATE THE MEMS DESIGN PROCESS AND PERFORM THE NECESSARY RESEARCH TO

Objective Classification

Miective Classification

EVALUATE THE MEMS DESIGN PROCESS AND PERFORM THE NECESSARY RESEARCH TO ESTABLISH NEW MICROCIRCUIT BATTERY TECHNOLOGY. FUNCTION: EVALUATE DESIGN TOOLS AND DEMONSTRATE SINGLE CHIP INTEGRATED MICRODEVICE TECHNOLOGY DEFICIENCY: DETERMINE THE LIMITATIONS IN THE CURRENT MEMS DESIGN PROCESSES THAT ARE LIMITING THE EFFECTIVE DESIGN AND APPLICATION OF SINGLE CHIP SYSTEMS. CONTRIBUTION: THE ABILITY TO DESIGN INTEGRATED MICRODEVICES (SYSTEMS) THAT WILL GREATLY ENHANCE THE FUNCTIONALITY AND AT THE SAME TIME REDUCE THE COST OF FUTURE DOD WEAPON SYSTEMS.

each Classification

PERFORM A DESIGN OF A SINGLE CHIP MICRODEVICE HYDROGEN AIR FUEL CELL AS AN ALTERNATIVE BATTERY TECHNOLOGY FOR INTEGRATED MICRODEVICE SYSTEMS. THE DESIGN PROJECT WILL ALSO ASSESS THE APPLICATION OF THE COMPOSITE CAD TOOLS FOR MIXED TECHNOLOGY SYSTEMS (FARLY PROGRESS REPORTING REGINS HERE) (9210/THIS RESEARCH IS LEADING TO THE DEVELOPMENT OF MICRO FUEL CELLS WITH ENERGY LEVELS OF OURD TEN TIMES AND BUILDEROUSE OF OURD TO TIMES THAT OF THIS BUILDERS. RECENTLY SEVERAL DESIGN AND PROCESSING CHANGES HAVE BEEN MADE TO THE SILICON SUBSTRATE, WHICH HAVE REDUCED STRUCTURAL WEAKNESSES. TO ACCELERATE THE FUEL CELL POWER UNIT DEVELOPMENT, NEW CERAMIC SUBSTRATES WERE ALSO FABRICATED, CONSIDERABLE EFFORTS ARE BEING MADE TO DEVELOP CATALYST/ISOMER NKS WITH ACCEPTABLE ANODE AND CATHODE CHARACTERISTICS THAT ARE ALSO SUITABLE FOR THICK FILM PRINTING, CONDUCTION IN CARBON INKS AT LOW HUMIDITY WAS ACHIEVED, BUT INCREASING THE POROSITY OF THE CARBON INKS IS A CURRENT FECHNICAL CHALLENGE. NEWLY SYNTHESIZED POLYMER ELECTROLYTES THROUGH WHICH HYDROGEN IONS CAN DIFFUSE AT LOW RELATIVE HUMIDITIES, AND WHICH ALSO HAVE LOW PERMEABILITY TO HYDROGEN AND OXYGEN DIFFUSION, ARE BEING EVALUATED. EXTREMELY FAST ASSORPTION/DESORPTION KINETICS WERE ACHIEVED WITH NEWLY DEVELOPED PALLADIUM INKS, WHICH WILL BE USED FOR ON BOARD STORAGE OF HYDROGEN AS A HYDRIDE. STRATEGIES ARE BEING DEVELOPED TO INCREASE THE VOLUMETRIC ENERGY DENSITY OF THE FUEL STORAGE BLOCK.

Progress Classification

(JUL 01) THIS RESEARCH WILL LEAD TO THE DEVELOPMENT OF MICRO FUEL CELLS WITH ENERGY LEVELS OVER TEN TIMES AND PULSE POWER OF OVER 100 TIMES THAT OF THIN FILM BATTERIES. POTENTIAL APPLICATIONS INCLUDE MICRO SENSORING, MONITORING AND DATA TRANSMISSION DEVICES. THE FUEL CELL AND HYDRIDE ENERGY STORAGE SYSTEM WILL BE INVESTIGATED FOR OPTIMIZED PERFORMANCE. DELIVERABLES INCLUDE A PROTOTYPE MICRO FUEL CELL POWER UNIT AND AN INTEGRATED MICRO FUEL CELL/ENERGY STORAGE DEVICE. THIS EFFORT ACOMPLISHED ITS INTENDED GOALS OF DEMONSTRATING AN OPERATIONAL MICRO BUSINGS OF L. DARRA MTO HAS DECIDED TO BUIND A TWO YEAR

DATA TRANSMISSION DEVICES. THE FUEL CELL AND HYDRIDE ENERGY STORAGE SYSTEM WILL BE INVESTIGATED FOR OPTIMIZED PERFORMANCE. DELIVERABLES INCLUDE A PROTOTYPE MICRO FUEL CELL POWER UNIT AND AN INTEGRATED MICRO FUEL CELL/ENERGY STORAGE DEVICE. THIS EFFORT ACOMPLISHED ITS INTENDED GOALS OF DEMONSTRATING AN OPERATIONAL MICRO FUEL CELL. DARPA MTO HAS DECIDED TO FUND A TWO YEAR EXTENSION TO THIS WORK IN THE AMOUNT OF \$300K ADDITIONAL, \$150K IN FY02 AND \$150K IN FY03. A BASELINE CHANGE IS IN-PROGRESS SIMPLY TO EXTEND THE END-DATE TO ALLOW RECEIPT OF THE APPROPRIATE ARPA ORDER AND TO ALLOW TIME TO INITIATE AND PROCESS THE FORTH-COMING ECP TO EXTEND THE PERIOD OF PERFORMANCE. ACTIVE COORDINATION WITH MS OLSON (AFRL/IFK) AND DR R. SAVINELL (CWRU PJ) IS IN PROGRESS (APRIL 02) THIS EFFORT ACCOMPLISHED ITS INTENDED GOALS OF DEMONSTRATING AN OPERATIONAL MICRO FUEL CELL. A BASELINE CHANGE IS REQUESTED TO FURTHER MATURE THE FUEL CELL DEVELOPMENT. A BASELINE CHANGE IS REQUESTED TO DEMONSTRATE REFINED MANUFACTURING METHODS TO GIVE REPRODUCIBLE PERFORMING PROTOTYPE FUEL CELLS INTEGRATED WITH FUEL STORAGE TO PROVIDE POWER DENSITY LEVELS THAT WILL HAVE PRACTICAL APPLICATIONS. DOD INSERTION OPPORTUNITIES WILL ALSO BE INVESTIGATED. THE CONTRACT FACE VALUE WILL BE I NOREASED FROM \$1.67M TO \$1.95M, AND THE COMPLETION DATE WILL BE EXTENDED FROM 30 AUG. 2002 TO 30 SEPT. 2003. THE BASELINE CHANGE HAS BEEN APPROVED BY THE DARPA MEMS PROGRAM MANAGER. (JULY 02) NEXT MILESTONE IS DETERMINING WHETHER HYDRIDE MATERIAL CAN BE "RECHARGED USING THE FUELCELL AS A HYDROGEN PUMP. (LMR SEP 02) THIS EFFORT IS ACOMPLISHING ITS GOALS OF DEMONSTRATING AN OPERATIONAL MICRO FUEL CELL. DARPA MTO HAS DECIDED TO FUND A TWO YEAR EXTENSION TO THIS WORK IN THE AMOUNT OF \$282K.
ADDITIONAL. \$139K IN FY02 AND \$143K IN FY03. THE BASELINE CHANGE REFLECTING THIS HAS BEEN IMPLEMENTED. LITH IZING POLYMIDE CO. POLYMER SYSTEM FOR ELECTROLYTE. WITH ANTICIPATED 2-5X IMPROVEMENT IN POWER DENSITY FOR THE FUEL CELL SYSTEM. NEXT MILESTONE: CONTINUE REFINEMENT AND RESEARCH WITH POLYMIDE CO.POLYMERS FOR ELECTROLYTE. (LMR MAR 03) ACCOMPLISHED INTENDED GOALS OF DEMONSTRATING AN OPERATIONAL MICRO FUEL CELL BASELINE CHANGE HAS LEAD TO REFINED MANUFACTURING METHODS YIELDING REPRODUCIBLY: PERFORMING PROTOTYPE FUEL CELLS INTEGRATED WITH FUEL STORAGE TO PROVIDE POWER DENSITY LEVELS THAT WILL BE COMPATIBLE WITH PRACTICAL APPLICATIONS. DOD INSERTION OPPORTUNITIES ARE IDENTIFIED AND BEING PURSUED, PACIFIC NORTHWEST NATIONAL LABORATORY (A DEPARTMENT OF ENERGY LAB) IS INCORPORATING THIS FUEL CELL IN THEIR "PETITE POWER SYSTEM*, NEXT MILESTONE, CONTINUE REFINEMENT OF MEMBRANE TECHNOLOGY/EFFICIENCY.. (LMR SEP 03) THIS EFFORT ACCOMPLISHED ITS GOALS OF DEMONSTRATING AN OPERATIONAL MICRO FUEL CE LL. A BASELINE CHANGE WAS EXECUTED IN JUNE 2002 TO FURTHER MATURE THE FUEL CELL DEVELOPMENT. THIS BASELINE CHANGE FACILITATED IMPROVED HYDROGEN STORAGE AND AN INCREASE IN OUTPUT POWER DENSITY AND INCREASED ENERGY DENSITY, DOD INSERTION OPPORTUNITIES CONTINUE TO BE INVESTIGATED. NEXT MILESTONE. PREPARE/PUBLISH FINAL TECHNICAL REPORT. (OCT 2005) ABSTRACT FROM FINAL REPORT: THE OBJECT OF THIS PROJECT IS TO PRODUCE A MICROFABRICATED HYDROGEN AIR FUEL CELL BY COMBINING MICROFABRICATION TECHNIQUES, POLYMER ELECTROLYTE FUEL CELL TECHNOLOGY, AND METAL HYDRIDE FUEL STORAGE. THE RESULT WILL BE A DEVICE CAPABLE OF PROVI

FINAL TECHNICAL REPORT (OCT 2005) ABSTRACT FROM FINAL REPORT: THE OBJECT OF THIS PROJECT IS TO PRODUCE A MICROFABRICATED HYDROGEN-AIR FUEL CELL BY COMBINING MICROFABRICATION TECHNIQUES, POLYMER ELECTROLYTE FUEL CELL TECHNOLOGY, AND METAL HYDRIDE FUEL STORAGE. THE RESULT WILL BE A DEVICE CAPABLE OF PROVIDING ON-BOARD ELECTRICAL POWER FOR MICROELECTRONIC CIRCUITS, SENSORS, AND ACTUATORS WITH ENERGY STORAGE AND POWER DELIVERY CAPABILITIES CONSIDERABLY GREATER THAN THAT OF THIN-FILM BATTERIES. INTEGRATED PACKAGES OF FUEL CELLS (UP TO THREE CELLS IN SERIES) AND FUEL STORAGE/HYDROGEN GENERATION HAVE BEEN SUCCESSFULLY FABRICATED AND TESTED. EACH OF THE MAJOR MILESTONES HAS BEEN ACHIEVED AND THE FABRICATION YIELDS AND DEVICE PERFORMANCE HAVE BEEN IMPROVED. WE HAVE ALSO BEEN LOOKING FOR INSERTION OPPORTUNITIES AND PARTNERS WITH WHICH TO DEVELOP THIS TECHNOLOGY, RECENTLY, WE HAVE SIGNED AN AGREEMENT OF COLLABORATION WITH THE ASHLAWN GROUP, LLC., OF ALEXANDRIA, VA TO DEVELOP THIS TECHNOLOGY TO PROVIDE POWER FOR "SMART" MUNITIONS.

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ENERGY STORAGE, HYDRIDE ENERGY STORAGE SYSTEM, HYDROGEN-AIR FUEL CELL, MICRO DATA TRANSMISSION DEVICES, MICRO FUEL CELL, MICRO MONITORING, MICRO SENSORING, MICRO-FUEL CELL POWER UNIT. SINGLE CHIP INTEGRATED MICRODEVICE. THIN FILM

Field(s) & Group(s): 090100 - ELECTRICAL AND ELECTRONIC EQUIPMENT

Local Control (Work Unit) Number:

ct Number 1:

Title Classification: UNCLASSIFIED Title: A MICRO HYDROGEN AIR FUEL CELL Report Number: AFRL-IF-R3-TR-2005-351 Report Number: AFRL-IFR3/TR-2005-351

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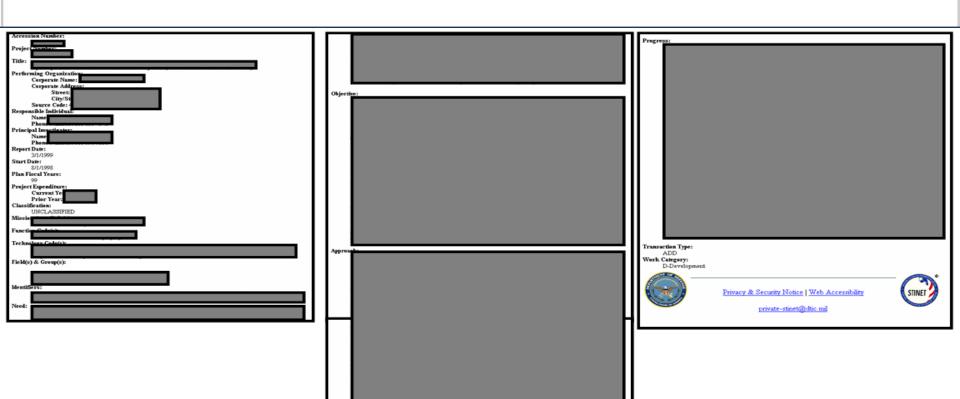
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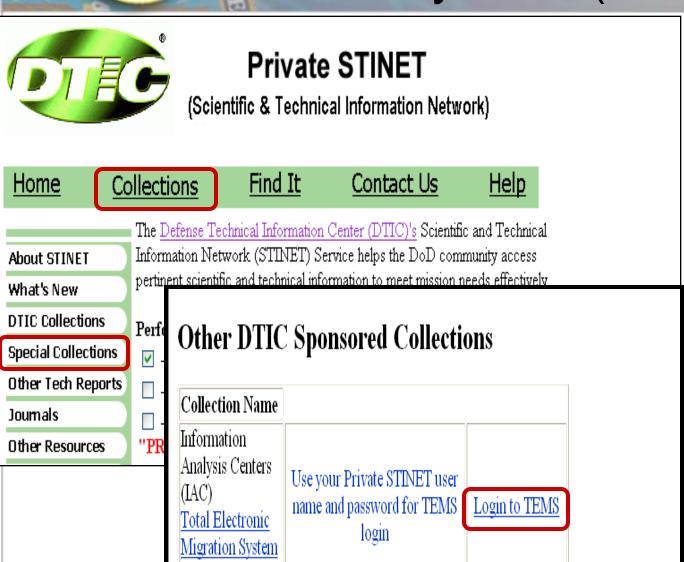
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DACS Data and Analysis Center for Software

IATAC Information Assurance

MSIAC Modeling & Simulation

RIAC Reliability

SENSIAC Sensor Technology

SURVIAC Survivability/Vulnerability

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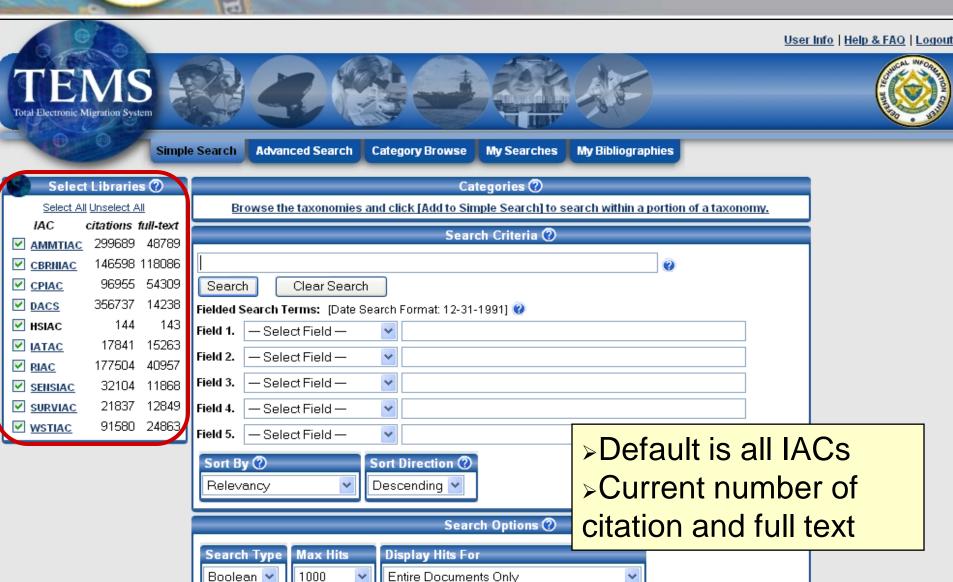
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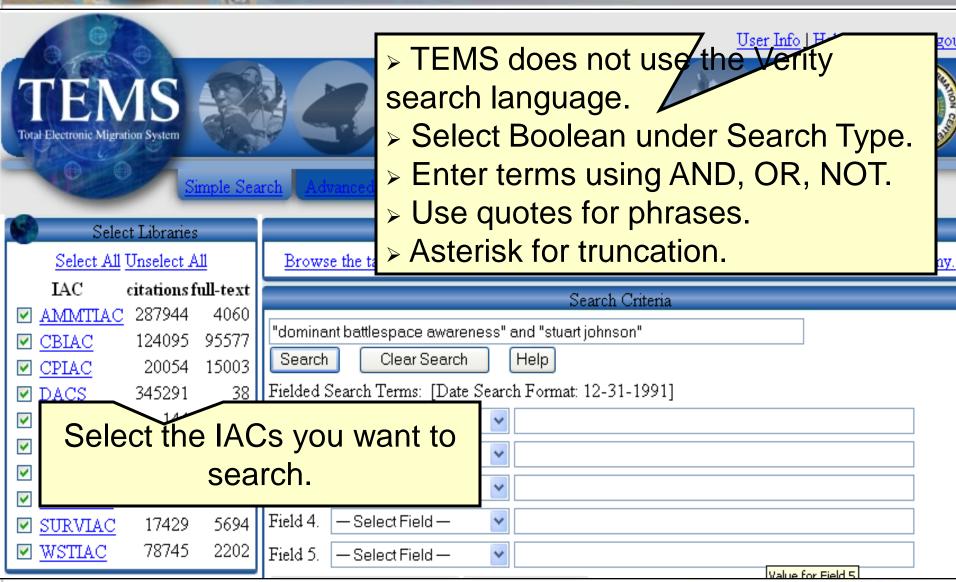


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Author:

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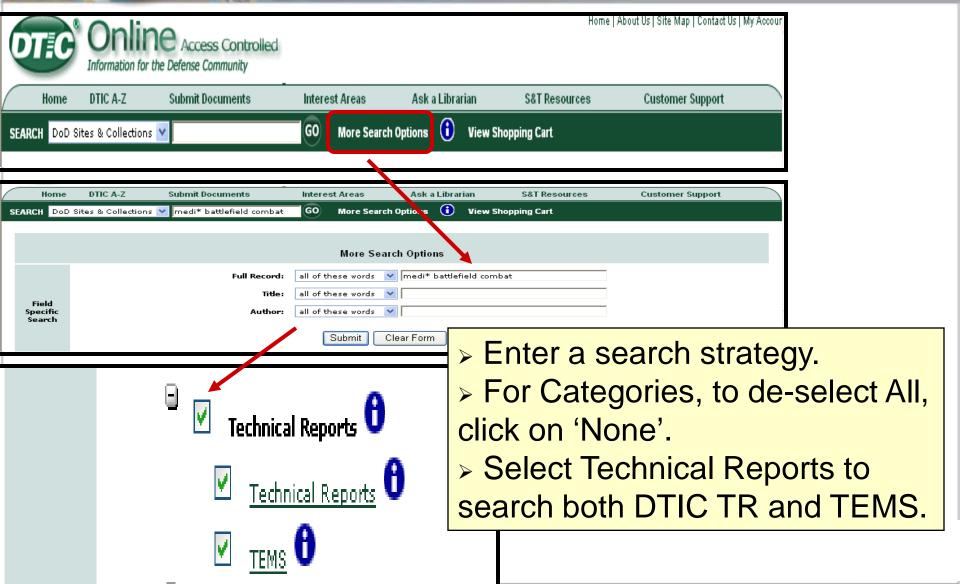
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Accession Number: SURVIAC-SV-24779

Distribution Code: A

Report Classification: UNCLASSIFIED

Collection: TEMS (IAC Technical Reports) (tems)



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Handbook for Users

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Private STINET consists of the following:

- DTIC's Technical Reports (TR) collection approximately 2 million bibliographic citations
- Full-text Technical Reports available for immediate download over 225,000 reports including everything added since Dec 1999
- · Active and inactive Research Summaries (RS) from 1965 to present
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- Canada Institute for Scientific and Technical Information's CISTI Source
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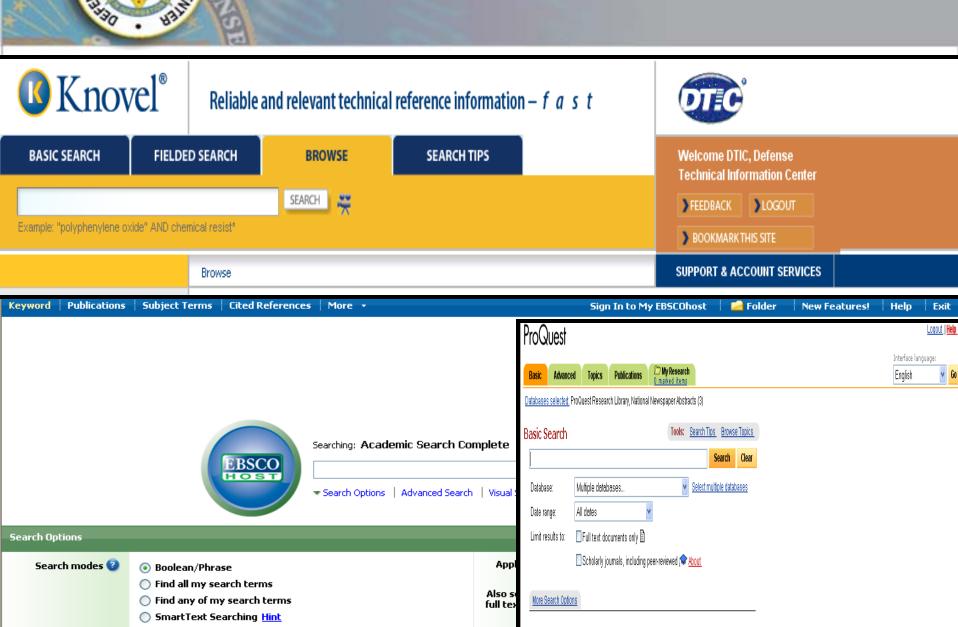
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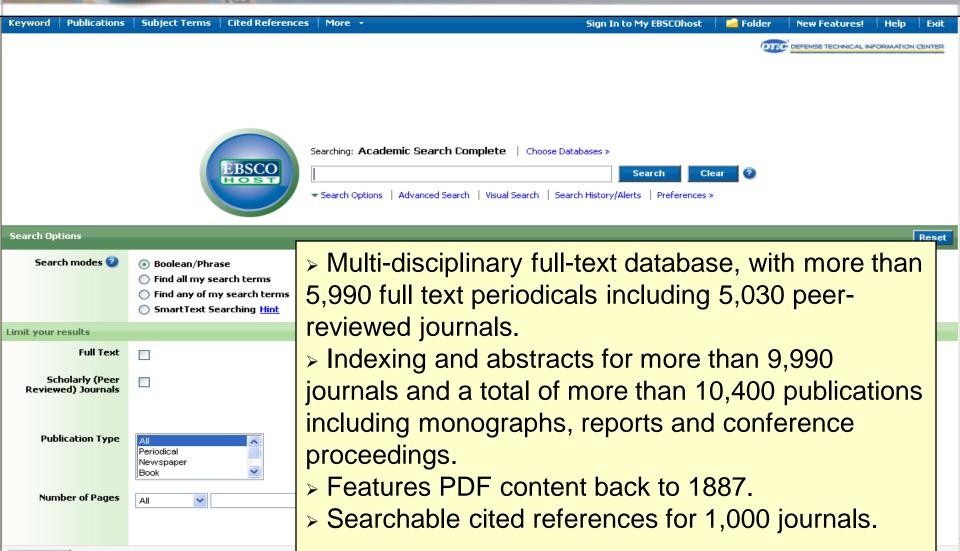
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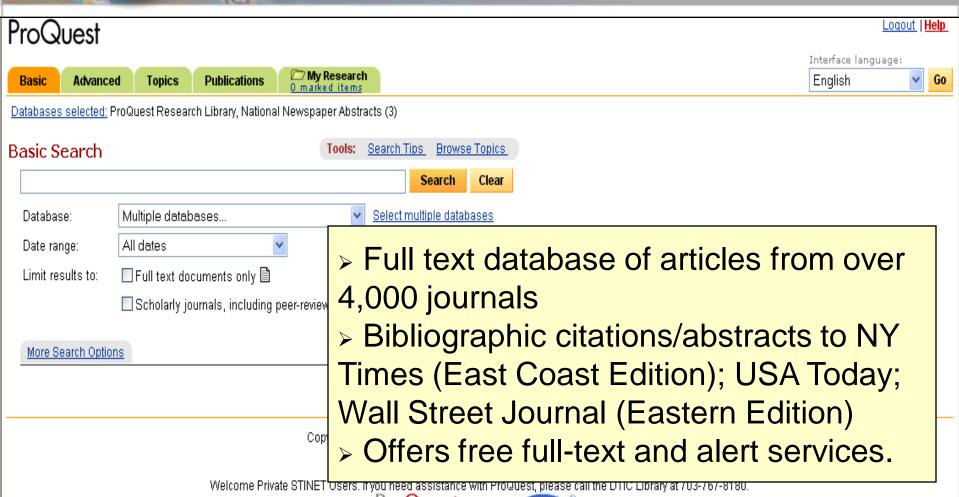
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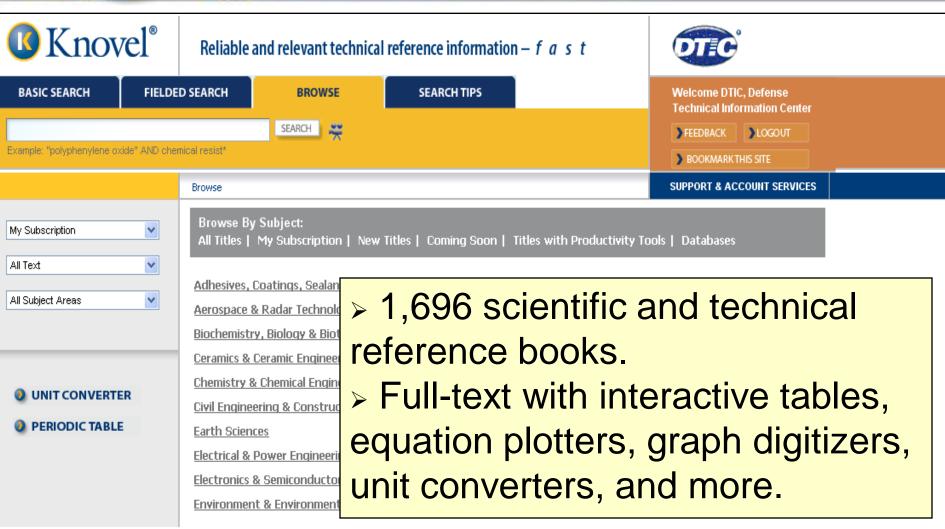


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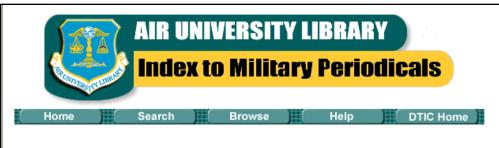
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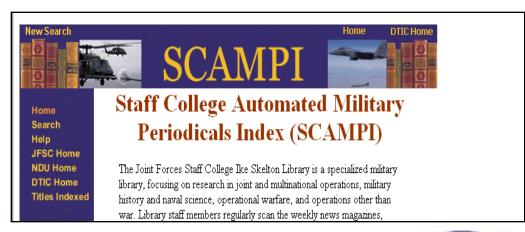
Military Journals



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SCAMPI: Joint effort between DTIC, Joint Forces Staff College Library (JFSC) and National Defense University Library (NDU). Same selection process and citation format as AULIMP. Focuses on joint operations and military history. Citations from 1996—present. Includes links to some journals' websites.

AULIMP: Joint effort between DTIC and Air University Library. Articles are selected from military and aeronautical journals by librarians. Brief citations, no abstracts, 1988—present. Includes links to some journals' websites.



Information for the Defense Community



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- American Nuclear Society (ANS)
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- American Solar Energy Society (ASES)
- ASM International
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- Society of Petroleum Engineers (SPE)
- 🔲 Stanford Linear Accelerator Center (SLAC)
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Research & Engineering (R&E) Portal (https://rdte.osd.mil)



All the information, sites and search options on the R&E Portal will be moved to the new DTIC Online Access Controlled (DOAC) when DOAC goes live.



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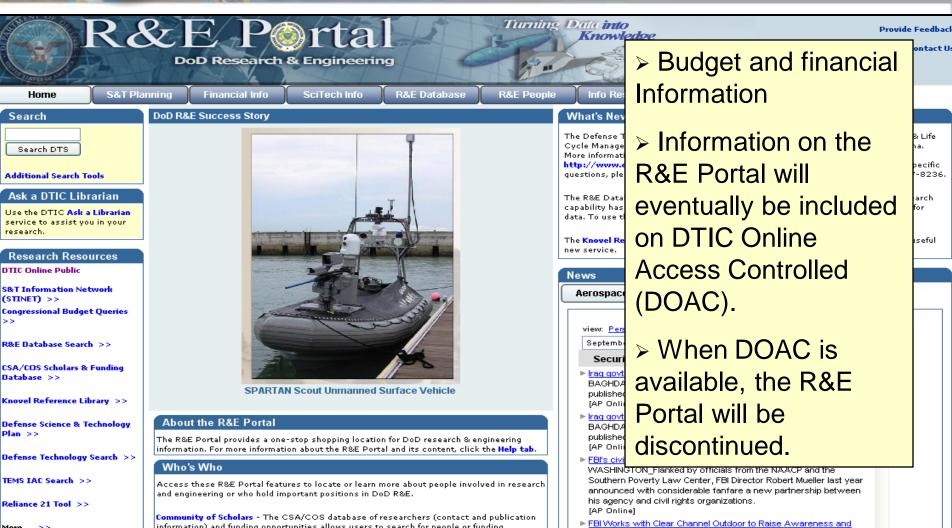
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information) and funding opportunities allows users to search for people or funding

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Reliance 21 Document Preparation Tool

The Reliance 21 Document Preparation Tool provides an access-restricted Web-based utility for the development and coordination of Reliance 21 documents that include the Basic Research Plan (BRP); Compone Science



Search DTS

Defense Science & Technology Planning - Reliance 21

JWSTP

BRP

Component Plans DDR&E Strategic and Reviews

TFT Plans and Marquee Programs Success Stories

Related Info.



DSTP Overview

The Defense Science and Technology Planning (DSTP) Website provides the latest planning documents describing key technology areas and programs funded by DoD.

Related Sites

Reliance 21 Document Preparation Tool

Reliance 21 S&T Collaborative Review Activities Calendar

News

Announcement(s):

The Joint Warfighting Science and Technology Plan 2008 is now available under the "JWSTP" Tab.

The Army Science and Technology Master Plan 2008 Supplement is now available under the "Component Plans and Reviews" Tab.

The 2008 Department of Defense Research and Engineering Strategic Basic Research Plan is now available under the "BRP" Tab.

The Success Stories On-line Catalog is now available under the "Success Stories" Tab. The On-line Catalog contains a link to the new Success Stories Library within the Defense Technology Search on

The Marquee Programs On-line Catalog is now available.

Key Dates:

TBD - JWSTP Kick-off Meeting

Defense Science & Technology Plan (DSTP)

The Defense Science & Technology Plan (DSTP) Web Site provides the latest planning documents describing key technology areas and programs funded by the DoD. These documents include the Basic Research Plan (BRP); Component Science and Technology (S&T) Strategic Plans; Defense S&T Success Stories Catalogue; DDR&E Strategic Plan; Joint Warfighting Science and Technology Plan (JWSTP); other S&T Reports and Briefings (i.e., Strategic Overview Briefings, S&T Collaborative Review (STCR) Briefings, etc.); and Related S&T Information.

Distribution C

ASSIST

Acquisition Streamlining & Standardization Information System (ASSIST)

ASSIST Online provides access to current information associated with military and federal specifications and standards in the management of the Defense Standardization Program (DSP). Managed by the DOD Single Stock Point (DODSSP), Philadelphia, ASSIST-Online provides public access to standardization documents over the Internet. ASSIST-Online includes many powerful reporting features and an exhaustive collection of both digital and warehouse documents, ASSIST is the official source of DOD specifications and standards. (registration is required)

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Director, Defense Research & Engineering >> DefenseLink List of DoD sites >> Defense Energy Security >> OSD Comparative Testing Office (CTO) Portal >> OUSD (AT&L) >>



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Knovel Reference Library >>

Congressional Budget

The R&E Portal has two sites that provide information on Congressional Budge changes to the President's Badget Request.

The **DoD Congressional Budget Data** Web site provides PDF and Excel spreadsheet versions of the Congressional Budget reports shortly after they are posted on the **Thomas** (Library of Congress) website.

The Congressional Budget Queries Web site helps DDR&E resource managers to respond to changes proposed by Gregress to the RDT&E budget. Locate information concerning:

- Total Authorization/Appropriation by Service/Agency and Budget
 Activity
- HASC/SASC/HAC/SAC/Conference Report
- Authorization/Appropriation by Program Element.

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CA/OT

FY03 CA/OT Report

The Cooperative Agreements and Other Transactions (CA/OT)
Congressional Report is submitted annually to the Senate Committee on
Armed Services and the House of Representatives Committee on Armed
Services. It reports on all those transactions entered into under 10 U.S.C.
2371(a) which are not categorized as contracts, cooperative agreements or
grants and all cooperative agreements entered into under 10 U.S.C. 2358
which include a section 2371 authorized clause requiring Recovery of Funds.

Distribution A

FY02 CA/OT Report FY05 CA/OT Report

FY06 CA/OT Report

DoD Congressional Budget Data DoD Congressiona Budget Data

Welcome to the Defense Technical Information Center (DTIC) sponsored DoD Congressional Budget Data website. From this site you can access DoD Congressional Budget data, in both PDF and Excel spreadsheet formats. DTIC's goal is to post the data from each report on this site after they are filed and made available on the Thomas (Library of Congress) website.

Disclaimer: The Congressional budget data contained on this site is based on the authoritative information found on Thomas, the Library of Congress' Web site. DTIC scans the Congressional budget data and converts the information into Excel spreadsheets, which are easier to manipulate. The converted data is reviewed by DTIC to ensure accuracy, however some conversion errors can be overlooked. The scanning process is approximately 95% accurate. You can view the authoritative Congressional budget data at http://www.thomas.gov.

Download: Select links in the table below to download PDFs or Excel spreadsheets of the associated sections of each report. Selecting the report link will allow you to download a PDF of the entire report.

FY2009 Reports	RDT&E PDF	RDT&E Spreadsheet	Procurement PDF	Procurement Spreadsheet	O&M PDF	0&M Spreadsheet	Personnel PDF	Personnel Spreadsheet
FY2009 HASC (House Report 110-652) 9.5мв	2.2MB	383K	2.2MB	258K	<u>815K</u>	<u>112K</u>	<u>45K</u>	<u>81K</u>
FY2009 SASC (Senate Report 110-335) в.2мв	<u>1.9MB</u>	<u>205K</u>	<u>1.8MB</u>	<u>307K</u>	<u>836K</u>	<u>195K</u>	<u>64K</u>	<u>69K</u>
Congressional Record for the FY09 Defense Authorization Act (S. 3001) 12.7мв	2.9MB	<u>253K</u>	2.4MB	<u>494K</u>	1.1MB	221K	<u>47K</u>	<u>30K</u>
FY2009 HAC	Report not yet released							
FY2009 SAC	Report not yet released							
FY2009 Appropriations Conference Report (CR and FY2009 Minibus) 35MB	<u>4.4MB</u>	<u>315K</u>	14.3MB	<u>411K</u>	10.6MB	<u>97K</u>	<u>5.7MB</u>	<u>110K</u>

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Search/Queries

Related Links

Library

DoD Congressional Budget Database

Welcome to the DoD Congressional Budget Database Website



The DoD Congressional Budget Database Website, accessible through the R&E Portal, is an Internet based tool for display and query of the President's Budget Request (PBR) data and the Congressional Marks data, the original PBR data that are adjusted (marked).

Congress "marks" the PBR data six times before the budget becomes Public Law; publishing the following six related reports:

- House Armed Services Committee (HASC)
- Senate Armed Services Committee (SASC)
- Authorization Conference Report
- House Appropriations Committee (HAC)
 Senate Appropriations Committee (SAC)
- Appropriations Conference Report





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DoD R&E Success Story



Researchers Improve Capability to Detect Cryogenic Tank Damage (Source: AFRL)

What's New

AT&L and DTIC host the Combatant Commanders Workshop 29-30 C Register for the 2007 Combatant Commanders Workshop, "Rapid Tec Support for the Warfighter," 29 and 30 October 2007, "Lighthouse," 9 VA. Space is limited. Workshop details and registration information at available at: https://www.enstg.com/Invitation. Enter Code: 20069

Notice to R&E Database Data Call Users: New clarifications have bee to the 2007 R&E Database Data Call Instructions. Please refer to the document, R&E Database Data Call 2007 Clarifications, posted on th Database tab.

The Knovel Reference Library is now available through the R&E Portal Check out this useful new service.

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September 14, 2007 🔻

Security Agencies



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rsjangid@civil.iitb.ac.in Email

Powai, Mumbai, Maharashtra 400076

Phone (+91-22) 2572 2545

> 2576 7346 2572 0439

(+91-22) 2576 8346

Associate Professor, Department of Civil Engineering, Indian Institute of Technology Bombay Affiliations

Web Pages http://www.civil.iitb.ac.in/~rsjangid

BE, M.Tech., PhD Degrees

Research Interests Research Areas of Interest:

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Vibration control using tuned mass damp

Non-linear dynamic analysis

Non-classically damped systems

Stochastic earthquake analysis

Active control of structures

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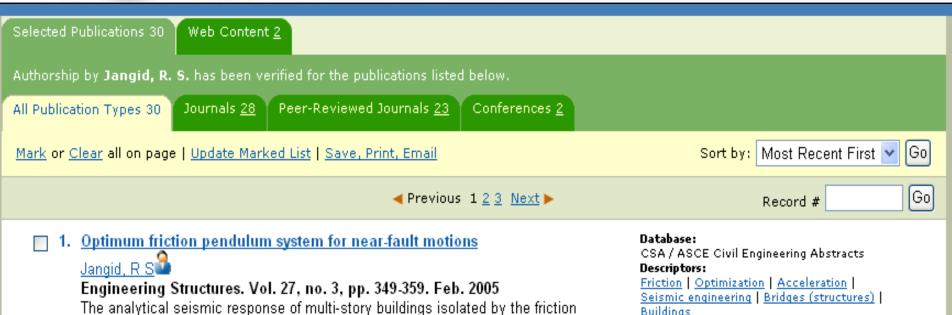
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SEISMIC RESPONSE OF PIPING SYSTEMS WITH ISOLATION DEVICES

pendulum system (FPS) is investigated under near-fault motions. The

Bakre, S.V. Jangid, R.S🍑, Reddy, G.R.

13 WCEE: 13th World Conference on Earthquake Engineering Conference Proceedings, 2004

superstructure is idealized as a linear shear type flexible building. The governing

In this paper, effectiveness of sliding friction damper is studied for reducing the seismic response of piping system. A 3D piping system with sliding friction damper as piping support is chosen for the present study. PiSANL - a computer program is ...

Publications are listed below the Scholar profile.

Buildings



Quick Look at the DTIC Online Sites & Content

- DTIC Online (Public)
- Private STINET and TEMS
- R&E Portal (This site will be removed when DOAC goes up but all information and sites will be available on DOAC)
- DTIC Online Access Controlled (DOAC) Coming soon



News Flash – Watch for Release

Announcements

DTIC is ready to go LIVE with DTIC Online Access Controlled (DOAC) Release 1





This page posts important notices about DTIC.

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Session 1

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- Tips to Start You Searching (Private STINET)
 - Search features
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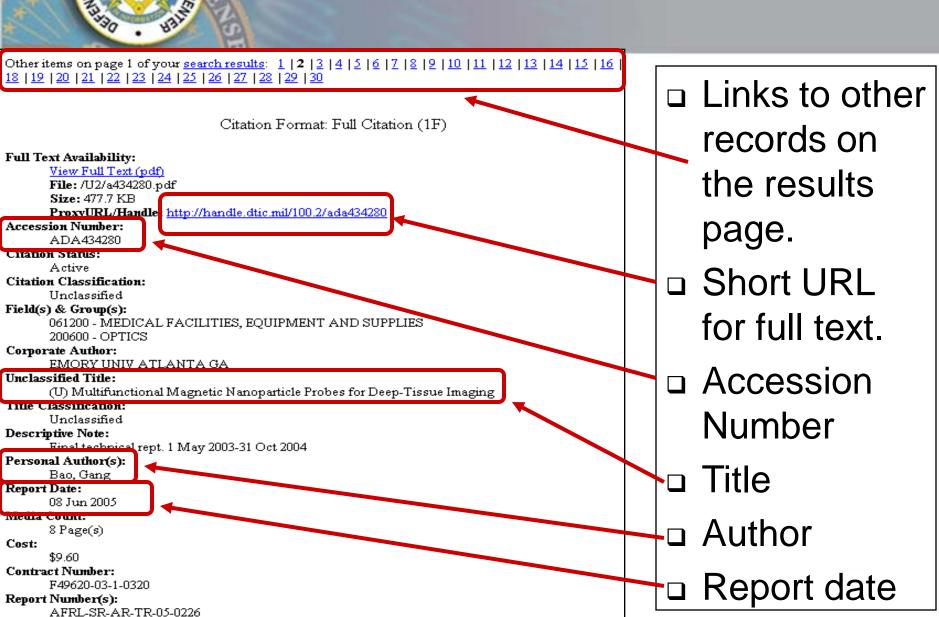
AD Number: ADA435904 Corporate Author: NAVAL POSTGRADUATE SCHOOL MONTEREY CA Personal Author: Paradise, Richard A. Report Date: June 01, 2005 Media: 75 Page(s) Distribution Code: 01 - APPROVED FOR PUBLIC RELEASE 26 - NOT AVAILABLE IN MICROFICHE Report Classification: Unclassified Source Code: 251450 From the collection:

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XC-AFOSR

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Monitor Acronym:

AFRL-SR-AR

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Monitor Series:

TR-05-0226

AFOSR

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Distribution Statement:

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Descriptors:

(U) *PROBES, *MAGNETIC RESONANCE IMAGING, IMAGE PROCESSING, MAGNETIC PROPERTIES, TISSUES(BIOLOGY), PEPTIDES, TRANSDUCERS, MEDICAL SEPTICES, CELLS (BIOLOGY), OLIGOMERS, IRON OXIDES, NUCLEOTIDES, NANOTECHNOLOGY

Identifiers:

(U) NANOPARTICLES, PHASE 1

Identifier Classification:

Unclassified

Abstract:

(U) The goal of the DARPA-AFOSR project is to develop multifunctional magnetic nanoparticle probes for deep-tissue imaging using MRI. The specific objectives of the Phase 1 project include: (1) to functionalize iron-oxide magnetic nanoparticles for bioconjugation of oligonucleotides and peptides; (2) proof-of-concept demonstration of the signal transduction mechanism based on nanoprobe clustering on mRNA target; (3) to develop peptide-based delivery of magnetic nanoprobes into living cells with high delivery efficiency; (4) to perform preliminary MRI studies of detection sensitivity and signal-to-noise ratio in solution and in cells. This innovative molecular imaging approximant integrates in vivo delivery, targeting/sensing and signal transduction; it has the potential to revolutionize medical imaging, diagnosis, and therapeutics with many DoD applications.

Abstract Classification:

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All Fields: Signal to Noise Ratio

Accession Number (AD): Search page

Your search for (signal to noise ratio) <and> (01 <in> dc)
matched 6899 out of 2017387 documents from the collection(s):

tr.

Statement on Search Results page

- No quotes for phrases
- No stop words
- Ignores case
- Ignores most punctuation

Abstract:

(U) The goal of the DARPA-AFOSR project is to develop multifur for deep-tissue imaging using MRI. The specific objectives of the functionalize iron-oxide magnetic nanoparticles for bioconjugation of oligonucleotides and peptides; (2) proof-of-concept demonstration of the signal transduction mechanism based on nanoprobe clustering on mRNA target; (3) to develop peptide-based delivery of magnetic nanoprobes into living cells with high delivery efficiency; (4) to perform preliminary MRI studies of detection sensitivity and signal-to-noise ratio in solution and in cells. This innovative molecular imaging approach integrates in vivo delivery, targeting/sensing and signal transduction; it has the potential to revolutionize medical imaging, diagnosis, and therapeutics with many DoD applications.



Punctuation

Replace punctuation with a space

- Compliance Assessment Protocols (OCAP)
 Search as compliance assessment protocols ocap
- Budget Policy, Deficits, and Defense
 Search as budget policy deficits and defense
- Evaluate an Applicant's Moral Values?
 Search as evaluate an applicant s moral values
- "Follow the Leader": Formation Control
 Search as follow the leader formation control



Stemming, Truncation & Wildcards

Stemming: **detect** finds over 200,000 records, including the terms **detects**, **detecting**, **detective**, etc., but not **detector** or **detectors**.

Without Stemming: "detect" finds over 15,000 records, only the term detect

Truncation: *detect** finds over 230,000 records, including the terms *detect, detects, detector, detectors, detectors, detective*, etc.

Wildcard: **detect?** finds over 1,200 records, only the term **detects**, not **detect**.





Accession Numbers

Technical Reports Quick Search Guided Search				
earch Language Search Tips Fields Corporate Source Hierarchy The				
Enter words or phrases in the fields you wish to search. If you enter terms in more than joined by the "AND" operator. The results set will contain citations that meet the criter				
Limit search to only those technical reports that have Full Text links available				
Submit Query Clear Query				
11 Fields:				
ccession Number (AD): ADA087894				
itle:				

Your search for (ada087894 <in> ad) matched 1 out of 2057602 documents from the collection(s): tr.

All Fields:	(ada087894 <in> ad)</in>	
Accession Number (AD):		
Title:		

- In the Accession Number field enter: ADA087894
- Note the ad mnemonic and
 operator on the search results screen.
- You can use this language in All Fields.



Titles

Technical R	eports Quick Search Guided Search
Search Language Search	Tips Fields Corporate Source Hierarchy Thes
	ields you wish to search. If you enter terms in more than. The results set will contain citations that meet the criter
Limit search to only those t	echnical reports that have $\mathbf{Full} \; \mathbf{Text}$ links availabl
	Submit Query Clear Query
All Fields:	
Accession Number (AD):	
Title:	Signal to Noise Ratio

Your search for ((signal to noise ratio) <in> ti) matched 216 out of 2057602 documents from the collection(s): tr.

All Fields:	(signal to noise ratio) <in> ti</in>
Accession Number (AD):	
<u>Title:</u>	

- In the Title field enter: Signal to Noise Ratio
- Note the ti mnemonic and <in> operator on the search results screen
- You can use this language in All Fields



Authors

Technical R	eports Quick Search Guided Search			
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	nelds you wish to search. If you enter terms in more than . The results set will contain citations that meet the criter			
Limit search to only those t	echnical reports that have Full Text links availabl			
	Submit Query Clear Query			
All Fields:				
Accession Number (AD):				
Title:				
Personal Author:	smith robert			
Your search for smith robert <in> au) matched 442 out of 2057602 documents from the collection(s): tr.</in>				
All Fields:	(smith robert <in> au)</in>			
Accession Number (AD):				
Title:				

- In the Author field enter: Smith Robert
- Note the au mnemonic and <in> operator on the search results screen
- You can use this language in All Fields



Personal Authors

> Invert the name, without the comma.

Example: Smith Robert

A search for a single name will look for the term as both a last and first name.

Example: *Kerry* will find *Roberts, Kerry* and *Kerry, Tom*

All searches are stemmed unless you use quotes.

Example: *robert* will find *robert* and *roberts*, but not *robertson* or *roberto*.



Personal Authors: The Broad Search

To find all versions of a name, use this search: **smith robert <or> smith r**

Personal Author:

smith robert <or> smith r

It will find:

Smith, Robert

Smith, Robert Q

Smith, Robert Dale

Smiths, R

Smith, RS

Smith, RD

Smith, R Daniel

Smith, R Allen

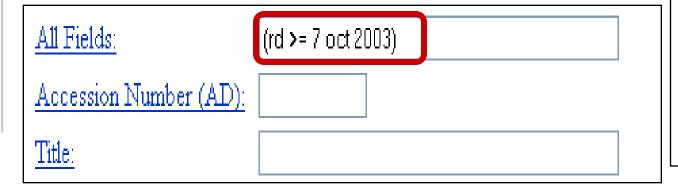
Leave out the middle initial since the author may not have always used it.



Report Dates



Your search for $(rd \ge 7 \text{ oct } 2003)$ matched 58887 out of 2057602 documents from the collection(s): tr.



- Date searches use relational operators: >, <,
 - =, <=, >=
- Dates must be in the format
 DD MMM
 YYYY.
- rd is the mnemonic for Report Date.
- Note the order is mnemonicoperator-date.



Report Dates

To search a range of dates use <and> to combine two search statements that define the beginning and end dates.

All Fields:

(rd >=1 jan 1990) <and> (rd < 1 jan 1992)

You can also use <in> and <or>.

All Fields:

(1990 kor> 1991) kin> rd



Distribution Limitations

Limit by <u>User Profile</u> or <u>Distribution Limitation</u>

Display Options:

Sort by:

Number of hits per page:

Pre-defined Citation
Display Format:



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Your search for (16 <in> dc) matched 38873 out of 2062592 documents from the collection(s): tr.

All Fields:

(16 **<**in> dc)

- Markings on the document that indicate to whom the document can be released.
- dc is the mnemonic for Distribution Code.
- Some options search additional codes with the same meaning.



User Profiles

Limit by <u>User Profile</u> or Distribution Limitation

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Sort by:

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Your search for ((01, 02, 09, 12, 16) <in> dc) matched 1563034 out of 2062592 documents from the collection(s): tr.

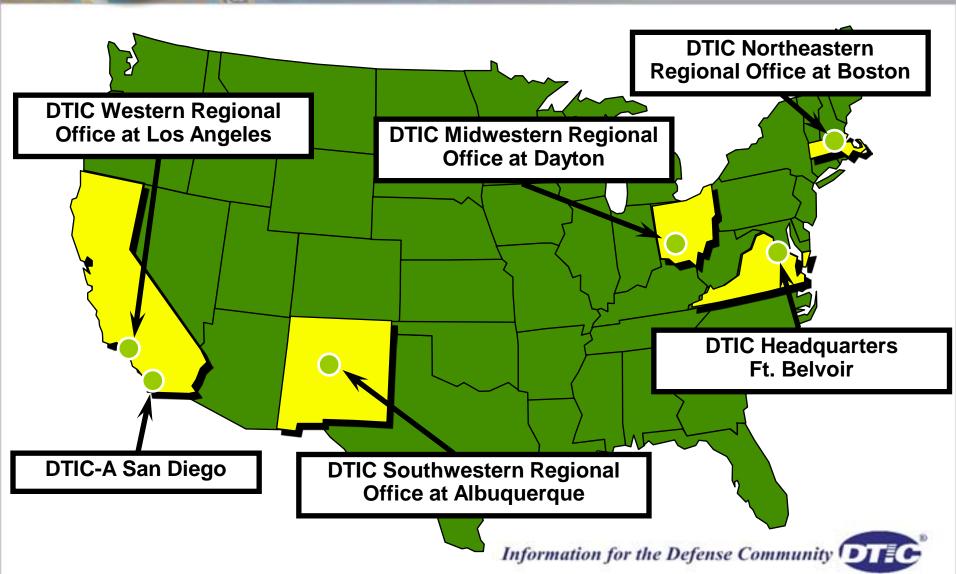
All Fields:

((01, 02, 09, 12, 16) <in> dc)

- Distribution Code searches for any documents accessible to a group of people.
- Releasable to the General Public is the same as 01-Approved for public release.
- None of the User
 Profiles include
 distribution codes
 05 or 15.



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DTIC Northeastern Regional Office at Boston

Hanscom Air Force Base

Bedford, MA 01731-3012

Phone: (781) 377-2413 / DSN 478-2413

Email: boston@dtic.mil

Office hours: Monday-Friday, 7:30 a.m. to 5:00 p.m. Eastern

DTIC Midwestern Regional Office at Dayton

Wright-Patterson AFB, OH 45433-7008

Phone: (937) 255-8141 / DSN: 785-8141

Email: dayton@dtic.mil

Office hours: Monday-Friday 7:30 a.m. to 4:00 p.m. Central





Regional Offices

DTIC Southwestern Regional Office at Albuquerque.

Kirtland AFB, NM 87117-5776

Phone: (505) 846-6797 / DSN 246-6797

Email: albuq@dtic.mil

Office hours: Monday-Friday, 7:30 a.m. to 4:30 p.m., Mountain

DTIC Western Regional Office at Los Angeles

El Segundo, CA 90245

Phone: (310) 653-2483/ DSN 633-2483

Email: losangel@dtic.mil

Office hours: Monday-Friday, 6:30 a.m. to 5:30 p.m. Pacific



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Contact Information

Candy Parker

703-767-7039

DSN: 427-7039

cparker@dtic.mil

Karen Nimerick

703-767-9072

DSN: 427-9072

knimeric@dtic.mil



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Information for the Defense Community

Session 2 What's New at DTIC Alerts & Bibliographies

Army Accessions Research Consortium 1-3 September 2009

Defense Technical Information Center
User Services Directorate
Ft. Belvoir, Virginia

Candy Parker cparker@dtic.mil 703.767.7039

Karen Nimerick knimeric@dtic.mil 703.767.9072



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Learning Objectives

- ➤ To become familiar with the mission of the Defense Technical Information Center (DTIC)
- ➤ To become familiar with DTIC's online systems and information resources
- > To learn search tips to retrieve information
- To create bibliographies and alerts/saved searches



Outline for Sessions 1 & 2

Session 1

- Defense Technical Information Center (DTIC)
 - > Mission
 - > Registration
 - > Overview of online systems and information resources
- Tips to Start You Searching (Private STINET)

Session 2

- What's new at DTIC
 - > DTIC Online Access Controlled (DOAC)
 - DoDTechipedia
- Create bibliographies and alerts/saved searches



Session 2

Session 2

- What's new at DTIC
 - DTIC Online Access Controlled (DOAC)
 - DoDTechipedia
- Create bibliographies and alerts/saved searches
 - Save a search strategy
 - > Schedule a saved search to create an alert
 - > Submit a search and create a bibliography



Content Repository

- More than 2 million documents in the technical reports collection
- More than 300,000 ongoing and completed DoD research summaries
- More than 170,000 descriptions of Independent Research & Development projects



Many Resources

- Private STINET Technical Reports
- Private STINET Research Summaries
- Private STINET IR&D
- Research & Development Descriptive Summaries 2000-present
- RDDS 1996-2000/2001-2003
- Total Electronic Migration System (TEMS)
- Air University Library's Index to Military Periodicals (AULIMP)
- Staff College Automated Military Periodicals Index (SCAMPI)
- Knovel Reference Library
- EBSCO Academic Search Complete
- ProQuest Research Library Complete
- Canada Institute for Scientific and Technical Information (CISTI) Source
- Inside Web
- MultiSearch
- Military Critical Technologies List
- DoD Index of Security Classification Guides
- DoD Dissemination Authority List (DAL)
- STINFO Documentation
- DoD Directives and Instructions

- R&E Database
- DTIC Search
- R&E Portal
- Defense Technology Search
- Global Technology Knowledge Base (GTKB)
- Egov
- Biomedical Research Database (BRD)
- Congressional Budget Queries
- DoD Congressional Budget Data
- CSA Community of Scholars
- Research Development Test & Evaluation Budget Data
- Rapid Reaction Technology Office (RRTO)
- Lab Demographics
- Defense Energy Security
- In house S&T activities report
- Defense Science & Technology Plan (DSTP)
- Reliance 21 Document Preparation Tool
- Cooperative Agreements and Other Transactions (CA/OT) Congressional Report
- Acquisition Streamlining & Standardization Information System (ASSIST)
- R&E Community Members

Information for the Defense Community



Defense Online Access Controlled (DOAC)

DoDTechipedia



DTIC is ready to go LIVE with DTIC Online Access Controlled (DOAC) Release 1



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Look and feel similar for both systems – Access Controlled and Public

Welcome to DTIC

The Defense Technical Information Center (DTIC) is the PREMIER provider of DoD technical information, DTIC is a DoD Field Activity under the Under Secretary of Defense for Acquisition, Technology and Logistics, reporting to the Director, Defense Research and Engineering (DDR&E).

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Private STINET provides DTIC registered users.

Provider of DoD Technical Information to Support the Warfighter

The Defense Technical Information Center (DTIC®) serves the DoD community as the largest central

resource for DoD and governmentfunded scientific, technical, engineering, and business related information available today .

Read more ...



A160 Hummingbird UAV The A160 program will exploit a hingeless, rigid-rotor









New Limited Site DOAC

- DTIC Online Access Controlled (DOAC)
 - Will combine the resources of Private STINET, TEMS and the R&E Portal
 - Once in production, the R&E Portal (https://rdte.osd.mil) will be shut down.
 - Private STINET and TEMS will continue to operate until all search functionality is present in the new system.



Purpose of DTIC Online

> Offer a unified interface for all resources

> Allow users to search across all resources

> Allow users to customize the site



Who Can Access DOAC?

- > Anyone who currently accesses:
 - R&E Portal
 - Private STINET
 - TEMS
- DoDTechipedia customers who are DoD employees
- Customers who sign up for temporary DTIC access at a conference

Caveat:

You may need to renew your account or complete your registration



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https://www.dtic.mil/

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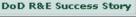


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Army Spc. Matthew B. Hintermajer sorts through insects caught in a light trap at Forward Operating Base Kalsu, Iraq, July 10, 2009. After sorting the insects, Hintermaier puts the sand flies and mosquitoes into small vials to be sent to Baghdad for disease testing, U.S. Army photo by Pfc, Bethany L. Little Full Story 🍱

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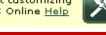
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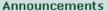


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Mark your calendars for the DTIC 2009 Conference to be held on 6-8 April at the Hilton Alexandria Old Town, Alexandria, Virginia. More information regarding this conference can be found on the Conference Web site located at

http://www.dtic.mil/dtic/annualconf/2009Home.html.

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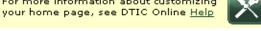
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Preventive Medicine

Army Spc. Matthew B. Hintermajer sorts through insects caught in a light trap at Forward Operating Base Kalsu, Iraq, July 10, 2009. After sorting the insects, Hintermaier puts the sand flies and mosquitoes into small vials to be sent to Baghdad for disease testing, U.S. Army photo by Pfc, Bethany L. Little Full Story



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ASSIST N =

Acquisition Streamlining & Standardization Information System (ASSIST) Online provides access to current information associated with military and federal specifications and standards in the management of the Defense Standardization Program (DSP), Managed by the Department of Defense Single Stock Point (DODSSP), Philadelphia, ASSIST-Online provides public access to standardization documents over the Internet. ASSIST-Online includes many powerful reporting features and an exhaustive collection of both digital and warehouse documents, ASSIST is the

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The Research, Development, Test, and Evaluation (RDT&E) Budget Data Web site provides funding information on budget cycles (Program Objective Memorandum (POM), Budget Estimate Submission (BES), and President's Budget Request (PBR)) by Budget Activity (BA) from FY1990 to the present and by Appropriation from FY1962. Users may export results to an Excel spreadsheet.

FY09 by BA and FY09 by Component

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Announcements



Mark your calendars for the DTIC 2009 Conference to be held on 6-8 April at the Hilton Alexandria Old Town, Alexandria, Virginia. More information regarding this conference can be found on the Conference Web site located at

http://www.dtic.mil/dtic/annualconf/2009Home.html.

More Announcements ...

DDR&E ▶ - ×

The Director of Defense Research & Engineering (DDR&E) Public Web site describes the mission, history, and organization of the office, introduces the Director, the Honorable John J. Young, and provides access to briefings and testimony, DDR&E is the organizational parent of the Defense Technical Information Center (DTIC).

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RDDS (R-2s) ▶ - ×

Research and Development Descriptive Summaries (RDDS) furnish narrative information on Research, Development, Test and Evaluation (RDT&E) programs and Program Elements (PE Numbers) within the Department of Defense (DoD). You can access older R-2s (1996-2000) through the Scientific & Technical Information Network (STINET) Web site.

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DSTP | - ×

The Defense Science & Technology Plan (DSTP) Web site provides the latest planning documents describing key technology areas and programs funded by the Department of Defense (DoD). These documents include the Basic Research Plan (BRP); Component Science and Technology (S&T) Strategic Plans; Defense S&T Success Stories Catalogue; Director, Defense Research and

Two sites provide information on Congressional Budget changes to the President's Budget Request (PBR).

DoD Congressional Budget 🕨 🗖 💌

The DoD Congressional Budget Data Web site provides PDF and Excel spreadsheet versions



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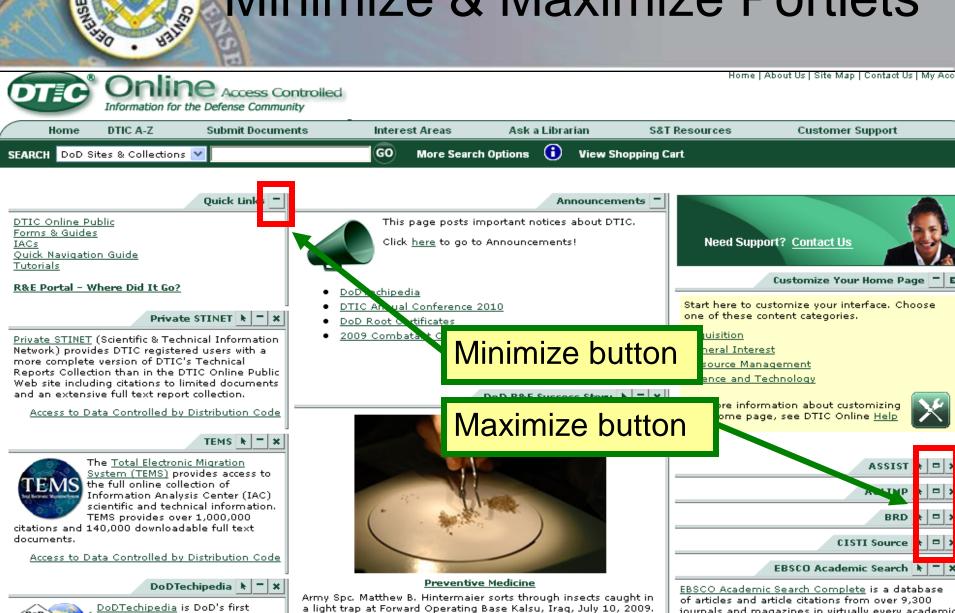
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journals and magazines in virtually every academic

articles when researching topics in social sciences,

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Advanced Materials, Manufacturing, and Testing Information Analysis Center (AMMTIAC)

Air Force Link (U.S. Air Force Homepage)

Air Force Research Laboratory (AFRL)

Air University Library Index to Military Periodicals (AULIMP)

Albuquerque Regional Office (See also Southwestern Regional Office)

Announcements ANSI/NISO Standard Z39.18, "Scientific and Technical Reports - Preparation, Presentation, and

Army Biometrics Task Force (BTF)

Army MPTR Behavioral Sciences Collection

Army Research Lab (ARL)

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ASSIST - (See - Specifications and Standards, Defense and Federal)

AULIMP (Air University Library Index to Military Periodicals)

Automatic Document Distribution (ADD) See Scheduled Searches

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Ballistic Missile Defense Organization - BMDO (currently known as the Missile Defense Agency)

Basic Research Plan (BRP)

Biomedical Research Database (DoD)

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- *Lab Demographics
- *Militarily Critical Technologies List (MCTL) (Restricted)
- *RDT&E Budget Resource Queries
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- Congressional Testimony

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testing, U.S. Army photo by Pfc. Bethan



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- *In-House Activities Report
- *Defense Science & Technology Plan

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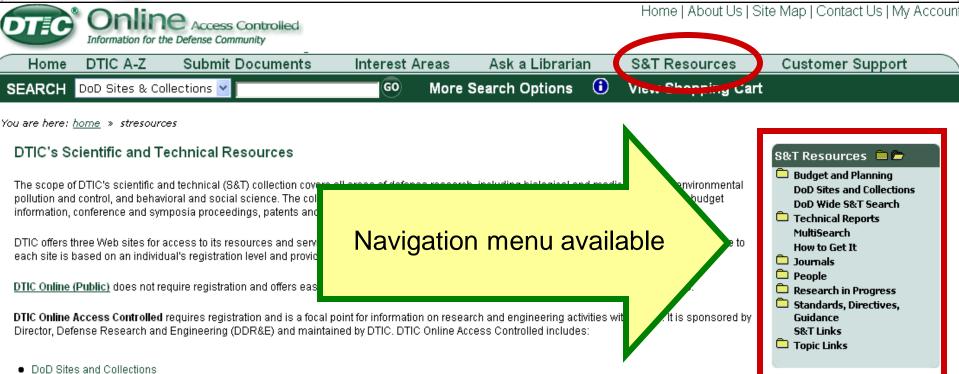
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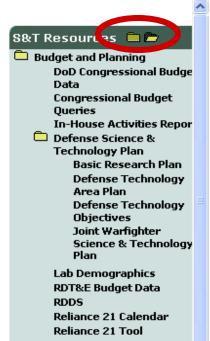
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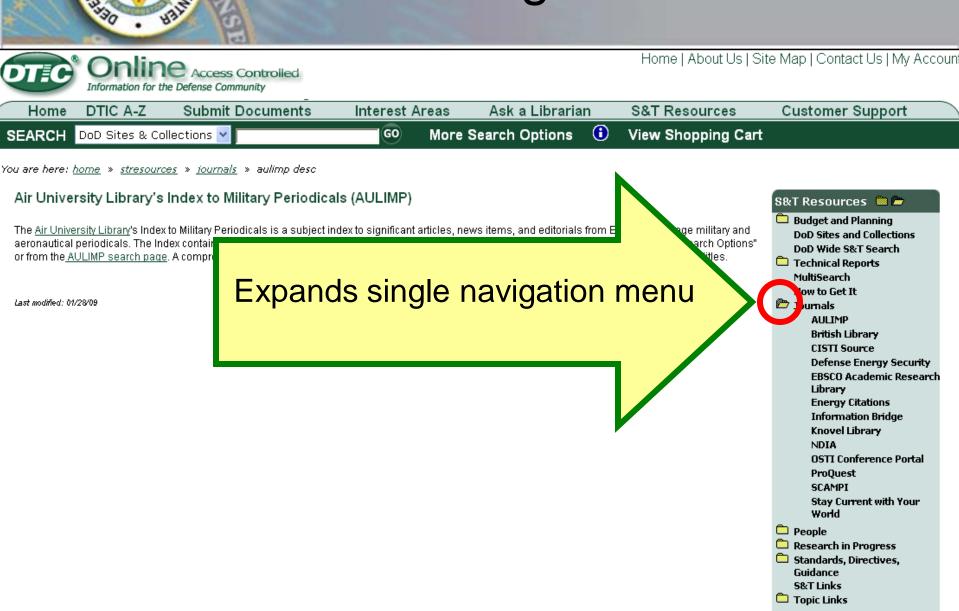
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- EBSCO Academic Se
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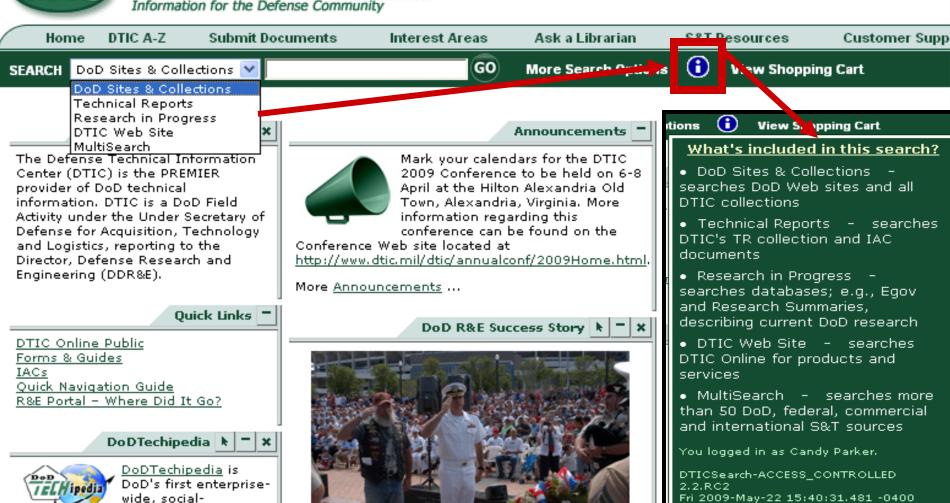
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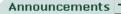
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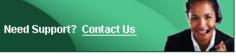
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A160 Hummingbird UAV

The A160 program will exploit a hingeless, rigid-rotor concept operating at the optimum rotational speed to produce a vertical take-off and landing (VTOL) unmanned air vehicle unmanned air vehicle (UAV) with low risk loading and low rotor tip...Full Story

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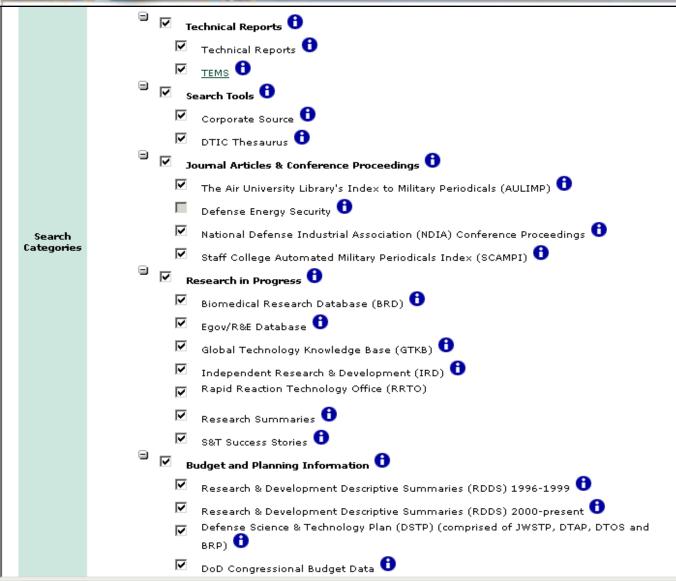


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Author: Brunderman, John A.;

Corporate Author: AIR WAR COLL MAXWELL AFB AL

Report Date: 12/01/1999

Pages:

Accession Number: WSTIAC-ADA393362

Distribution Code: A Report Classification: UNCLASSIFIED

Collection: TEMS (IAC Technical Reports)

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Author: Scott, W B Corporate Author:

Report Date:

Pages: 4

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Abstract:

The emergent technology of high power radio frequency in a directed energy role has huge potential for military use, in both offensive and defensive roles. There are many applications for this type of technology, from minesweeping to anti-aircraft artillery to unmanned combat aerial vehicles. Given the current U.S. dominance in precision attack and air combat capability, new technologies might serve to challenge this advantage if an enemy can exploit them. This paper examines the question of whether U.S. tactics or strategy will have to change with these systems in the hands of an adversary, assuming they were used in an integrated air defense role to counter U.S. high-tech deep-strike capability. Specifically, could high power microwave systems become an effective defense against our standoff cruise missile and stealth technology and if so, could an adversary develop and deploy them without our knowledge in order to catch us unaware? Based on the findings, the conclusion recommends several

avenues that the Air Force should pursue to prepare for these future weapons. Entered Rv.



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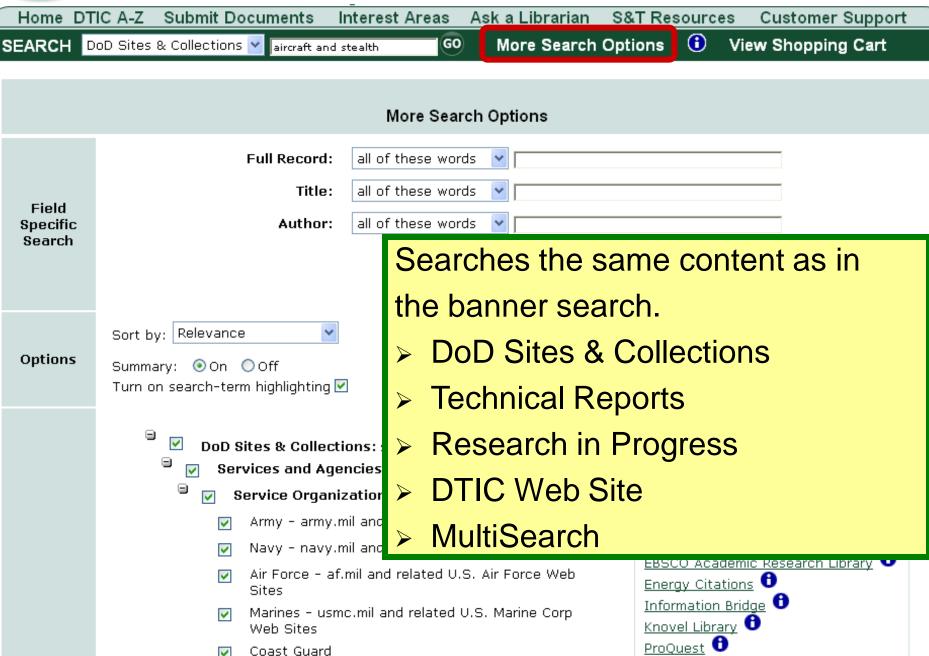


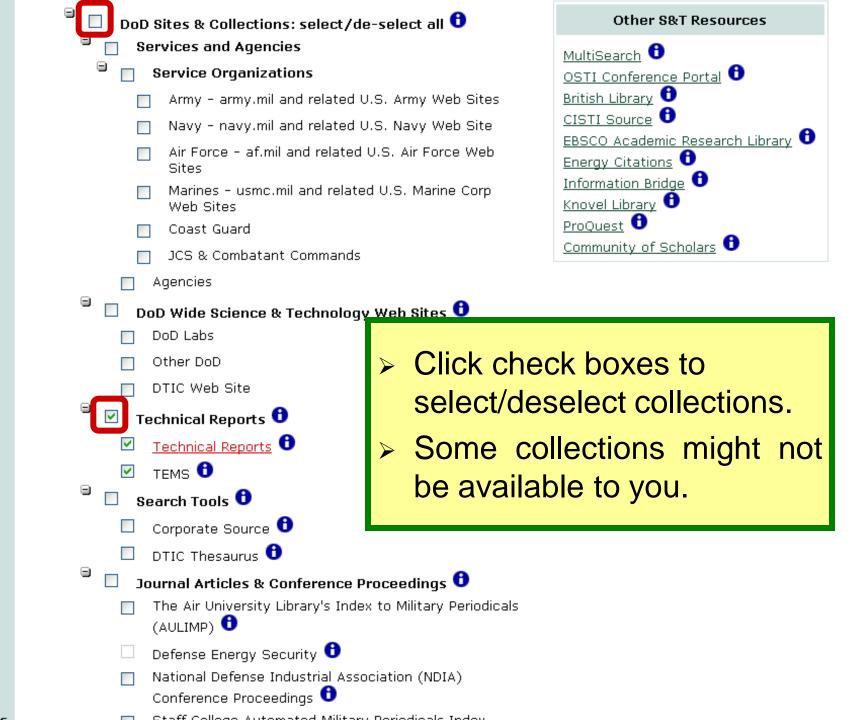
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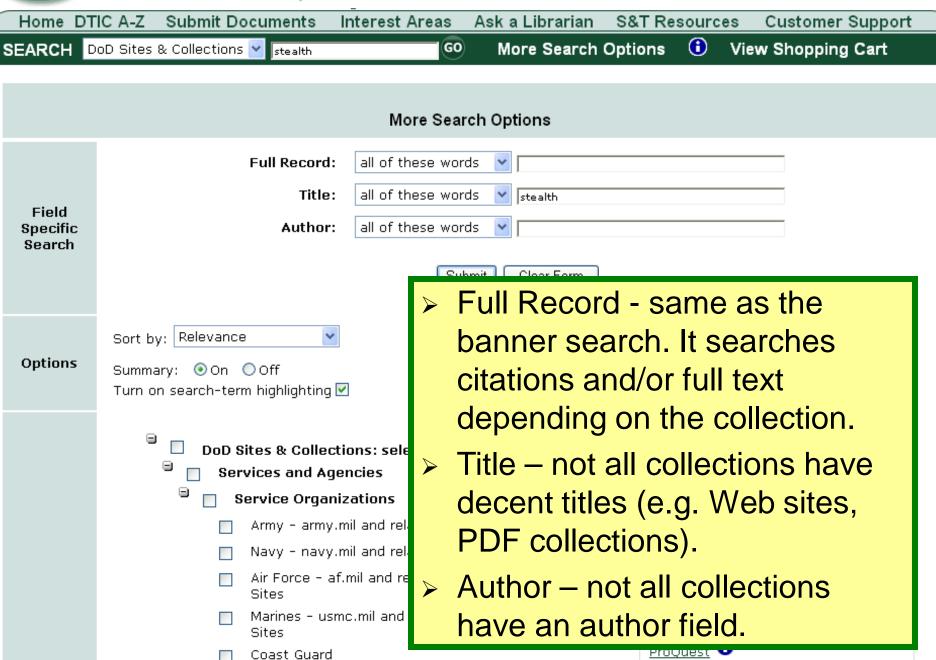






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1 View Citation | View Full Text PDF - 0 MB

Title: Prevention of Organophosphorous Lethality with OPA Anhydrolase (OPAA-2) Containing Stealth Liposomes.

Author:

Corporate Author: Report Date: 10/01/2001

Pages:

Accession Number: CBIAC-CB-187622

Distribution Code: A

Report Classification:

Collection: TEMS (IAC Technical Reports)

2 View Citation | View Full Text PDF - 0 MB

Title: Introduction to RF Stealth Author: Lynch, Jr., David

Corporate Author:

Report Date: 01/01/2004

Pages: Accession Number: SURVIAC-SV-22707

Distribution Code: A

Report Classification: UNCLASSIFIED

Collection: TEMS (IAC Technical Reports)

3 View Citation | View Full Text PDF - 0 MB Title: B-2 STEALTH BOMBER FACT BOOK 1995

Author: NA; NA; NA;

Corporate Author: NORTHROP B-2 DIV, STRATEGIC STUDIES DEPT, 8900 E WASHINGTON BLVD, PICO RIVERA, CA, 90660-

3737

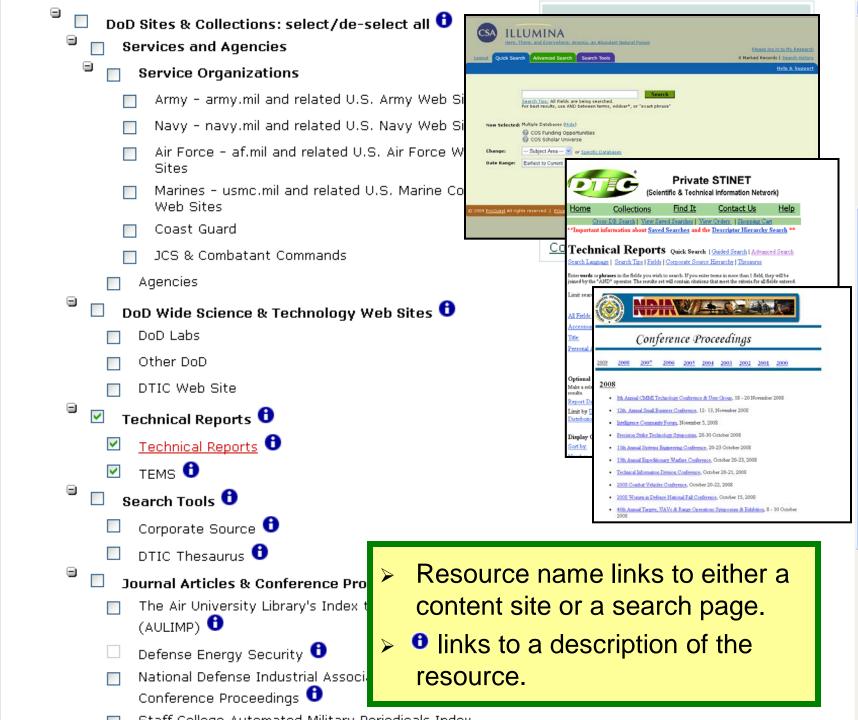
Report Date: 06/22/1995

Pages: 0

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- Search Tools the Corporate Source and DTIC Thesaurus from Private STINET/DTIC Online Public



Journal Articles & Conference Proceedings

- The Air University Library's Index to Military Periodicals (AULIMP) – citations of journal articles collected by Air University Library
- Defense Energy Security full-text journal articles and slides accessible to a small community
- National Defense Industrial Association (NDIA)
 Conference Proceedings PDFs of presentations
- Staff College Automated Military Periodicals Index (SCAMPI) - citations of journal articles collected by Air University Library



Research in Progress

- Biomedical Research Database (BRD) extracts from the Research Summaries collection
- > Egov/R&E Database annual summaries of all DoD research
- Global Technology Knowledge Base (GTKB) summaries of foreign research
- Independent Research & Development (IR&D) summaries of contractor-funded research (from Private STINET)
- Rapid Reaction Technology Office (RRTO) SOWs and Quad charts of technology developed by RRTO
- Research Summaries summaries of DoD research (from Private STINET)
- > **S&T Success Stories** summaries of successful technologies developed by DoD



Budget and Planning Information

- Research & Development Descriptive Summaries (RDDS) 1996-1999 – PDFs of R2 documents
- Research & Development Descriptive Summaries (RDDS) 2000-present – PDFs of R2 documents
- Defense Science & Technology Plan (DSTP) PDFs of plans from the DSTP site
- DoD Congressional Budget Data PDFs and spreadsheets of congressional authorizations & appropriations, FY07-present
- In-house S&T Activities DoD In-house S&T Activities Management Reports, FY02-07



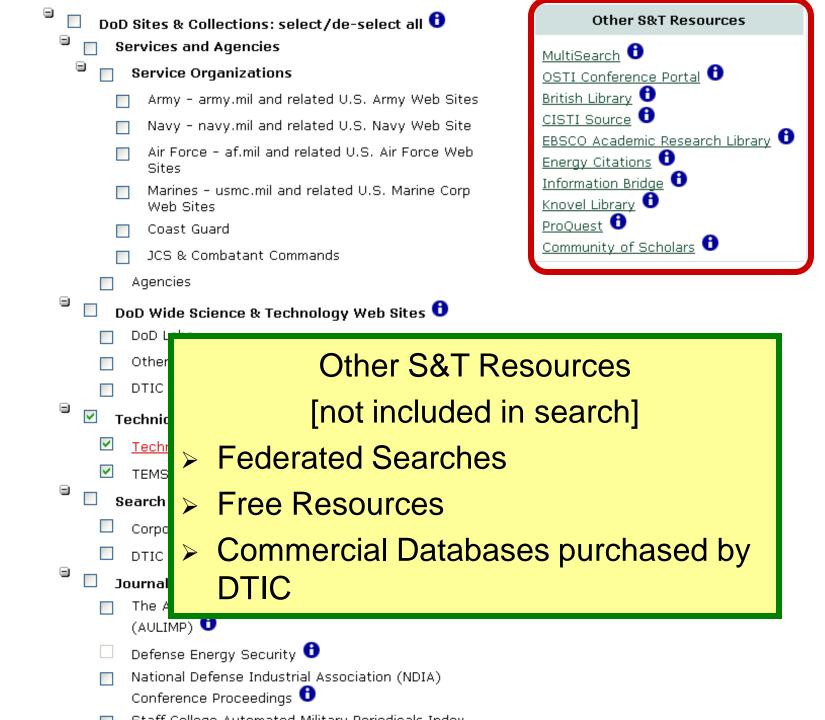
Collections

Standards, Directives, Guidance

- DoD Index of Security Classification Guides PDFs of sections of the index (from Private STINET)
- DoD Issuances (Directives and Instructions) the WHS site and search engine
- Military Critical Technologies List (MCTL) Public collection of PDFs
- Military Critical Technologies List (MCTL) Limited database of PDFs

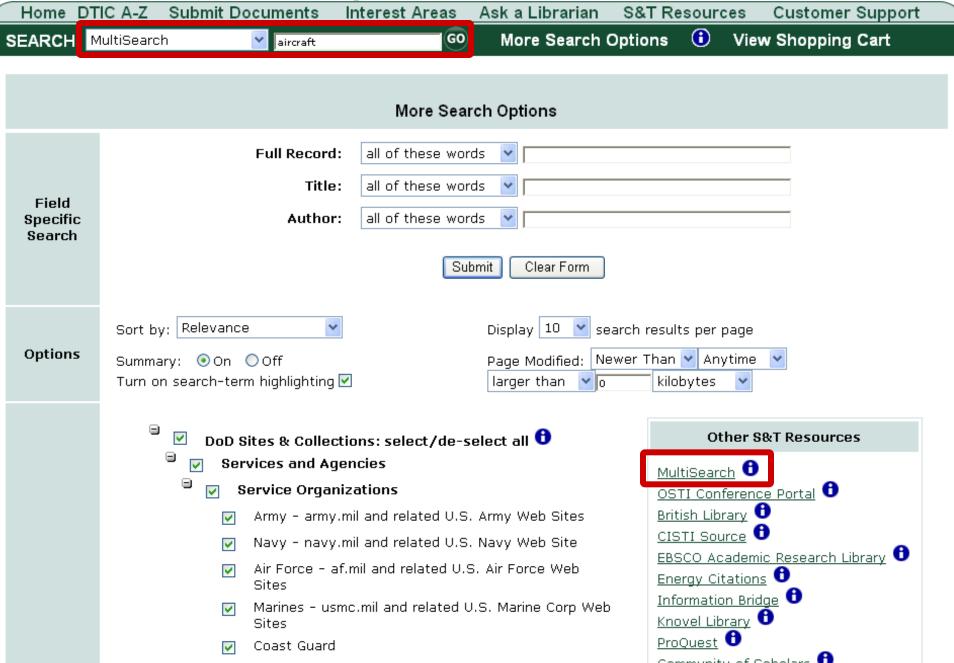
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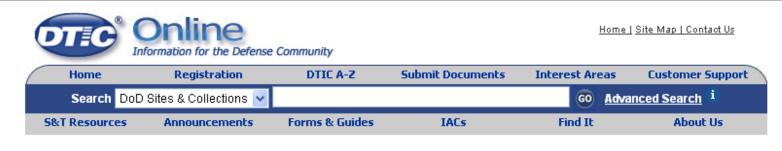
R&E Community Members – database of DoD S&T POCs



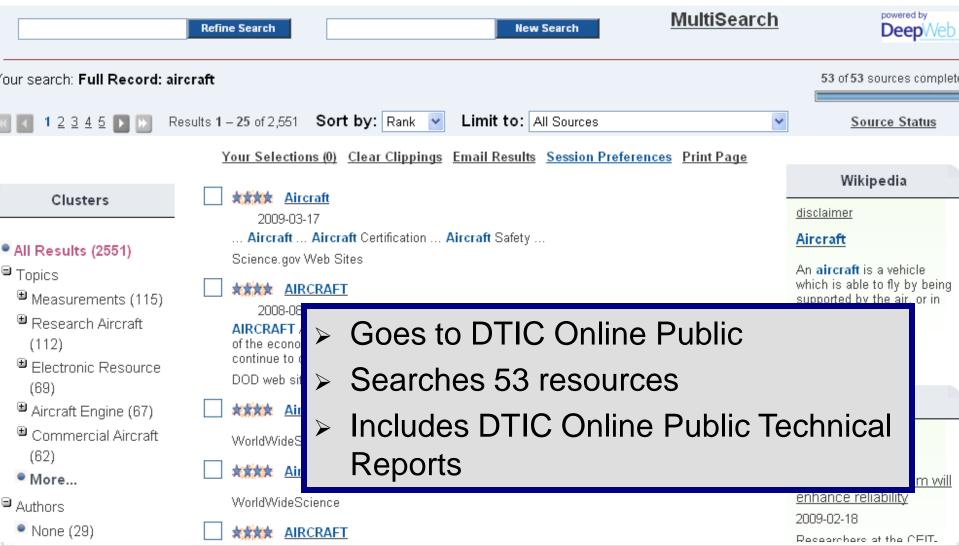
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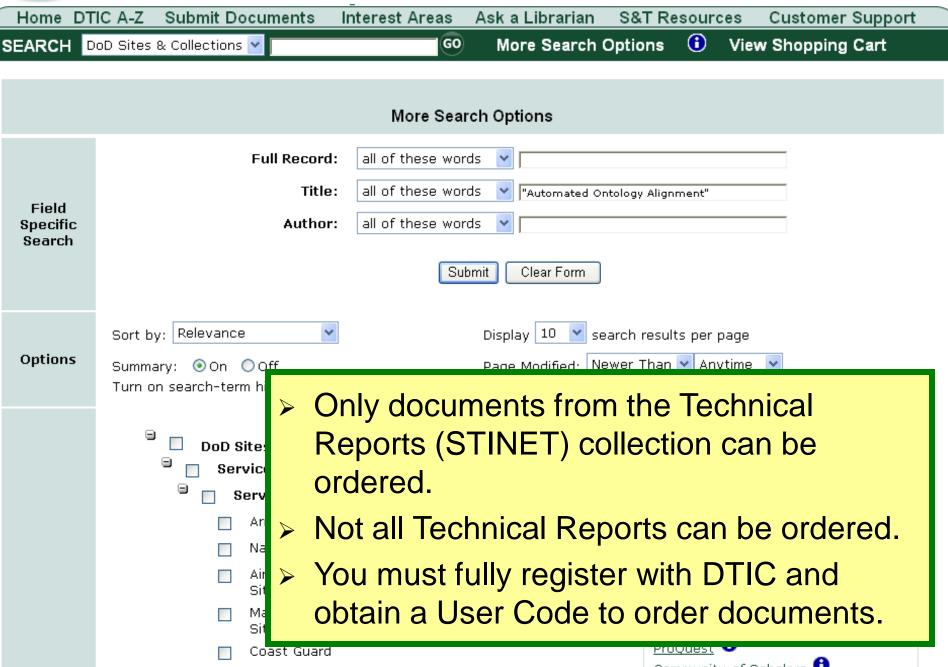
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DoDTechipedia



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DTIC Launches DoDTechipedia

The Under Secretary of Defense for Acquisition, Technology and Logistics (AT&L) announces the launch of DoDTechipedia, an initiative of the Defense Technical Information Center (DTIC®), at the direction of the Director of Defense Research and Engineering (DDR&E). A DoD scientific and technical wiki, DoDTechipedia is designed to increase communication and collaboration among DoD scientists, engineers, program managers and operational warfighters. This tool will enable DoD personnel to collaborate on technological solutions, reduce costs, add capability and avoid duplication. DoDTechipedia will aid in the rapid development of technology and the discovery of innovative solutions to meet critical capability needs and gaps.

Creating a valuable source of information requires input. Share your knowledge, assist a colleague, ask a question, post an event, start a blog to and be part of the development of the DoD's first knowledge network. To ensure that the most advanced technologies reach the warfighter tomorrow, collaborate on DoDTechipedia today.

For additional information about DoDTechipedia, call 1-800-225-3842 or email: dodtechipedia@dtic.mil. For registration assistance, email: reghelp@dtic.mil.

This is the current Limited Access site.



Purpose

- ➤ DoDTechipedia is a living knowledge base, created to provide users a place to collaborate on DoD scientific and technical issues.
- > It is a wiki, edited by people like you.
- ➤ Please help increase the value of DoDTechipedia by editing pages and sharing your knowledge.



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Added by paluzsayn1234, last edited by Ashley Gohl on Aug 21, 2009 (view change)

TinyLink (useful for email): https://www.dodtechipedia.mil/dodwiki/x/AwAN

Labels EDIT LABELS (None)

Feature Article: N Center, Dahlgren



NSWC Dahlgren provides evaluation, analysis, syster certification of complex nav warfare, strategic systems, associated with surface wa certification for weapons, c Execute other responsibiliti Naval Surface Warfare Center.

- DoD wiki to encourage collaboration and information sharing among the S&T community.
- > This is the unclassified, limited site.
- > There is a also DoDTechipedia SIPRNET where SIPRNET users can collaborate in the SIPRNET environment.

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·

and create blogs.

Feature Article: Naval Surface warrare Center, Dahlgren (NSWCDD)



NSWC Dahlgren provides research, development evaluation, analysis, systems engineering, integra

certification of complex naval warfare systems reluce warfare, strategic systems, combat and weapons systems associated with surface warfare. Provide system integration and certification for weapons, combat systems and warfare systems. Execute other responsibilities as assigned by the Commander, Naval Surface Warfare Center.

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Added by paluzsayn1234, last edited by Ashley Gohl on Aug 26, 2009 (view change)

TinyLink (useful for email): https://www.dodtechipedia.mil/dodwiki/x/AwAN

Labels EDIT LABELS

(None)

Feature Article: Unmanned Vehicles



Classified as any device that doesn't require direct human interaction. unmanned vehicles have been employed by the DoD since the 1940's and 1950's. Some of the earliest unmanned vehicles

were weather balloons that employed sensors to measure and record climatic conditions for later analysis. Unmanned vehicles are classified in one of these three categories: Unmanned Aerial Vehicles (UAV's), Unmanned Ground Vehicles (UGV's), and Unmanned Undersea Vehicles (UUV's). Operation of UAV's, UGV's and UUV's is performed either remotely or autonomously (independent of human influence).

To read more, Click here

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Feature Article: Unmanned Vehicles

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were weather balloons that employed record climatic conditions for later ana are classified in one of these three cat Vehicles (UAV's), Unmanned Ground Unmanned Undersea Vehicles (UUV's) UGV's and UUV's is performed either r (independent of human influence).

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land, mobile, radio, Imr

Interest Areas represent technical challenges that DoD faces in maintaining military readiness and effective mission capabilities. Any user, whether a program manager or a soldier overseas, with specific immediate or emerging technological interests or needs, can contribute, posting questions for the DoD Science and Technology (S&T) community.

To view information on existing S&T initiatives, see Technology Areas, which represent the collaborated solutions across the DoD Science and Technology (S&T) community.

- Advanced Clothing
- Cloud Computing in the Tactical Environment
- DDR&E Prize Wearable Power
- DDR&E Strategic Foresight & Agility Initiative (SFA-I)
- DDR&E Strategic Science and Technology Priorities
- Electronics Stewardship
- Energetic Material Sensitivity Data
- Experimentation Community of Practice
- FY11 JDDE (TRANSCOM) RDT&E New Proposals Announcement
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- · How to Add an Acronym or Term
- How to Edit Pages
- How to Create a New Page
- How to Report a Problem
- · How to Insert Footnotes
- Tips for Formatting Text

Intermediate

- How to Create a Personal Space
- How to Create Personal Pages
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- · How to Move a Page

Advanced

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- Wiki Markup

Wiki Administrators

How to Create a Blog



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For a sandbox of your own, create a personal page.

"Science is organized knowledge. Wisdom is organized life." - Immanuel Kant

"If we knew what it was we were doing, it would not be called research, would it?" - Albert Einstein

Sub-Topic Areas

- CG-LIMS Project Tailoring Plan (test)
- · Electromagnetic Railgun
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- test page



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Added by paluzsayn1234, last edited by Melissa Hollinger on Jul 23, 2009 (view change)

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how-to:

DoDTechipedia is a wiki. This means that the web pages here are created and edited by people just like you. The below tutorials take you through many of the processes you will use when contributing to the wiki, so you can see how easy it is.

Note: If you want to practice editing a wiki page, please use the Sandbox.

For a full user guide on performing the functions outlined below, see User Guide PDF Document or User Guide Word Document.

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- How to Create a Personal Blog share your thoughts
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Welcome to DoDTechipedia

Article Edit this page Attachments (2)

History

Request To Delete Add Page

Welcome Candace parker | History | Preferences | Log Out 🎮 🚐

Add Discussion

Added by paluzsayn1234, last edited by Ashley Gohl on Aug 26, 2009 (view change)

TinyLink (useful for email): https://www.dodtechipedia.mil/dodwiki/x/AwAN

Labels EDIT LABELS

(None)

Feature Article: Unmanned Vehicles



Classified as any device that doesn't require direct human interaction.

unmanned vehicles have been employed by the DoD since the 1940's and 1950's. Some of the earliest unmanned vehicles

were weather balloons that employed sensors to measure and record climatic conditions for later analysis. Unmanned vehicles are classified in one of these three categories: Unmanned Aerial Vehicles (UAV's), Unmanned Ground Vehicles (UGV's), and Unmanned Undersea Vehicles (UUV's), Operation of UAV UGV's and UUV's is performed either remotely or autonor (independent of human influence).

To read more, Click here

What Is DoDTechipedia?

DoDTechipedia is a living knowledge base, created to provide users a place to collaborate on DoD scientific and technical issues. It is a wiki, edited by people like you. Please help increase the value of DoDTechipedia by editing pages and sharing your knowledge.

Getting Started

- · First time users can practice adding and editing content using the Sandbox
- · Adding an Acronym is an easy way to share your knowledae
- For further assistance, please contacthe site administrators at dodtechipedia@dtic.mil
 - interests, challenges of needs.
 - · Not ready to add a new technology page? Share



Points of Contact

For technical support, contact the DoDTechipedia administrators at dodtechipedia@dtic.mil

- Ashley Gohl, System Administrator agohl.ctr@dtic.mil, 703-767-8239
- Melissa Hollinger, Project Manager mholling@dtic.mil 703-767-9115
- Paul Simon, PM Support, psimon.ctr@dtic.mil
 703-767-9930



Session 2

Session 2

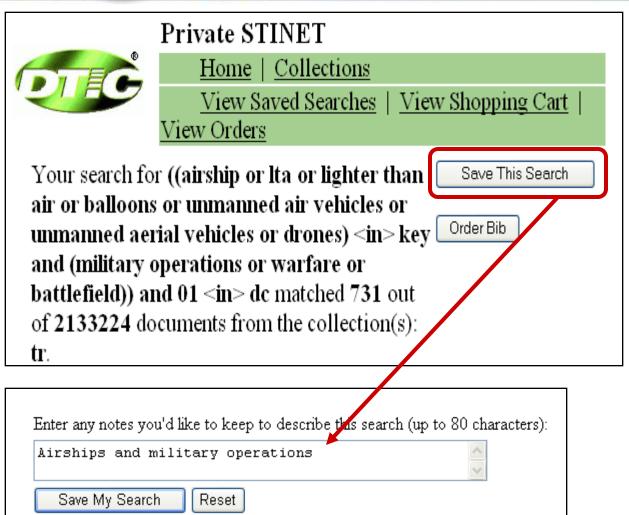
- What's new at DTIC
 - DTIC Online Access Controlled (DOAC)
 - DoDTechipedia
- Create bibliographies and alerts/saved searches
 - Save a search strategy
 - Schedule a saved search to create an alert
 - Submit a search and create a bibliography



Create Scheduled Searches/Alerts and Bibliographies



Save This Search (Strategy)



- Submit a search
- On the search results screen, click on <u>Save</u>
 <u>This Search</u>.
 This saves the strategy, not the results.
- Enter notes to describe the search.



Save This Search (Strategy)

	ilitary operations		
Save My Search	Reset		
Search Control Number:	88279		
Date Saved:	Wed, 19 Aug 2009		
Notes:	Airships and military operations		
Search:	((airship or lta or lighter than air or balloons or unmanned air vehicles or unmanned aerial vehicles or drones) <in> key and (military operations or warfare or battlefield)) and 01 <in> dc</in></in>		
Collection:	tr		
Sort Field:	RD		
Sort Order:	Descending		
Format:	1F		
Custom:			
Hits per Page:	30		
Does Found:	731		
Current Awareness: Schedule the frequency of delive Biweekly Monthly C To order microfiche: Order (biweekly schedule only			
(orweekty schedule offty	⁹		

- Receipt displays
 Search Control
 Number, Date
 Saved, Search
 Statement, and
 Display Format.
- You can
 Schedule a
 Search to set up an alert.
- You can <u>Delete</u>,
 <u>Modify</u>, or
 <u>Execute</u> the
 Search.



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Other Resources

Journals:

MCTL

View Saved Search



Private STINET Handbook

Private STINET

(Scientific & Technical Information Network)

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(To change your email address, email the

Registration Team at reghelp@dtic.mil.)

Inquire about Saved & Scheduled

Searches, Bibliographies, or Document

Orders.



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Numbers



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**Important information about Seved Searches and the Descriptor Hierarchy Search **

Technical Reports Quick Search | Guided Search | Advanced Search

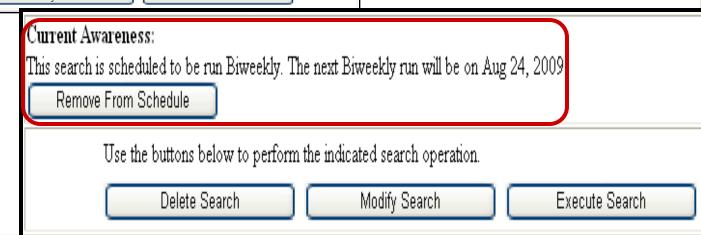
Search Language | Search Tips | Fields | Corporate Surce | Thesaurus

- Click on View Saved Searches from any search screen to retrieve a search.
- Use the 'My Account' link on the homepage



Schedule a Saved Search to Create an Alert

Search Control Number:	88279		
Date Saved:	Wed, 19 Aug 2009		Scheduled searches
Notes:	Airships and military operations		
Search:	((airship or lta or lighter than air or balloons or unmanned air vehicles or unmanned aerial vehicles or drones) <in> key and (military operations or warfare or battlefield)) and 01 <in> dc</in></in>		emails you a notice when the search
Collection:	tr		runs.
Sort Field:	RD	1_	Coloot Divrockly
Sort Order:	Descending		Select Biweekly,
Format:	1F		Monthly, or Quarterly
Custom:			for free email.
Hits per Page:	30		for free email.
Docs Found:	731		Microfiche is no
Current Awareness: Schedule the frequency of delivery for your current awareness search Biweekly Monthly Quarterly Schedule To order microfiche: Order (biweekly schedule only) Use the buttons below to perform the indicated search operation.			longer available. Remove From Schedule to cancel
Delete Search Modify Search Execute Search			





View a Scheduled (Saved) Search (Alert)



Private STINET

<u>Home</u> | <u>Collections</u>

View Saved Searches | View Shopping Cart | View Orders

Below are the 5 searches you currently have scheduled:

Show: All Scheduled Unscheduled

Search Control Number:	88279		Oli ala ara
Date Saved:	Wed, 19 Aug 2009		Click on
Notes:	Airships and military operat	ic	Searche
Search:	((airship or lta or lighter that vehicles or drones) <in> ke <in> dc</in></in>		search s
Collection:	tr		retrieve a
Sort Field:	RD		
Sort Order:	Descending		Use the
Format:	1F		link on th
Custom:			IIIIK OII U
Hits per Page:	30		
Docs Found:	731		
Current Awareness:			

- Click on View Saved
 Searches from any
 search screen to
 retrieve a search.
- Use the 'My Account' link on the homepage

This search is scheduled to be run Biweekly. The next Biweekly run will be on Aug 24, 2009

Remove From Schedule

Use the buttons below to perform the indicated search operation.

Delete Search

Modify Search

Execute Search



Receive the latest updates to your Scheduled Search (Alert) by email

From: camod@dtic.mil

To: Parker, Candy CIV DTIC B

Subject: DTIC Current Awareness Scheduled Search Results



Your bi-weekly search of the DTIC Collections database indicates that 13 record(s) matching your saved search criteria for SCN 71748 were received since the last scheduled search.

A summary of up to the first 25 of your search results is below:

Report Date AD Number

Author

Title

Zhou, Xianlian Przekwas, A

2009-06-23 ADB350459 Wilkerson, P Tan, X G Harrand, V Besier, Thor Delp, Scott Zhou, An Integrated Optimization System for Lightening the Load of Warfighters

To view these records, click on the following link:

https://dtic-stinet.dtic.mil/stinet/controller? requestedScreen=viewSavedSearch&scn=71748&histkey=60169.

You will be prompted to logon Private STINET and the saved search will provide the citations (hit list) for this update.

The full text of some of the documents retrieved by your Scheduled Search may not be accessible at the time you receive the search results, but should be obtainable shortly thereafter. We are working to reduce the processing time to their availability.

This email has been automatically generated to notify you of the recent updates to the DTIC collections matching your Scheduled Search. This Scheduled Search can be cancelled by using the Private STINET "View Saved Searches" link to display your saved searches and then by clicking the "Remove From Schedule" button for this search. Your search will be removed from the scheduled searches but will remain as a saved search.

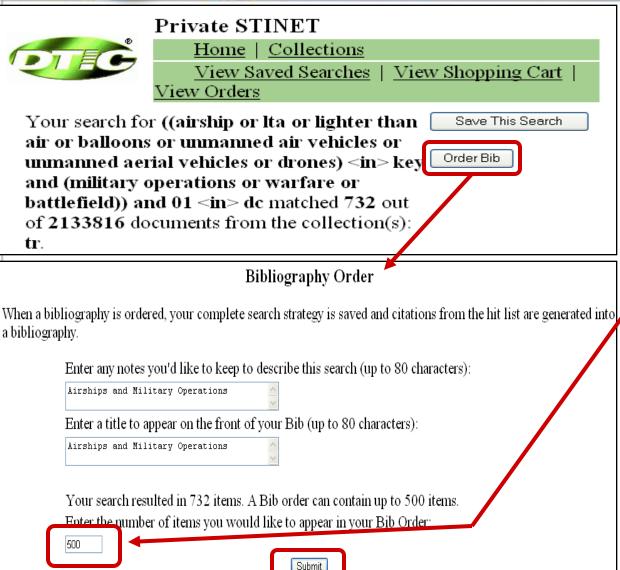
You may want to consider revising your search criteria for this query if no records matching the search criteria were found. For assistance contact bibs@dtic.mil or call the Current Awareness Team at 703-767-9047 or 703-767-9063.

After viewing the search results, you can order a Bibliography using the "Bib Order" function on the results page.

- The email from a scheduled search indicates how many records were found and shows the first 25 records.
- Click on the link in the email to view the full records.
- You will receive only hits from the latest update.



Order a Bibliography



- Create and save a list of search results by clicking on Order Bib on the results screen.
- IMPORTANT: set the number of items in the bib.
- □ There is a 500 item limit
- Bibs are available in about 20 minutes.
- Search strategies are automatically added to Saved Searches.



Order a Bibliography

	Private STINET Home Collections View Saved Searches View Shopping Cart View Orders
	* = a required field
Bib Output T Contract Num First Name: Last Name: E-Mail Addre Daytime Pho	nber: (Last 6 digits required field for contractors ordering Classified material)
Attention Lin	e: * Airships and Military Operations
	Submit Order Cancel

- The only required field on this page is the Attention Line.
- □ Bibs are free



Bibliography Receipt

Receipt for Order Number: 73725

Order Number:	73725
Date Ordered:	Thu, 20 Aug 2009
Order Type:	Bib, Electronic
SCN:	88344
Ordered For:	parkerc7762
Contract Number:	
First Name:	Candy
Last Name:	Parker
E-Mail Address:	cparker@dtic.mil
Daytime Phone:	703.767.7039
Extension:	
Attention Line:	Airships and Military Operations

View Electronic Bib

Search Information:		
Bib Title:	Airships and Military Operations	
Search:	((airship or Ita or lighter than air or balloons or unmanned air vehicles or unmanned aerial vehicles or drones) <in> key and (military operations or warfare or battlefield)) and 01 <in> dc</in></in>	
Collection:	tr	
Format:	1F	
Custom:		
Notes:	Airships and Military Operations	
Sort Field:	RD	

- Displays SCN (Search Control Number), search statement and display format.
- Displays a list of AD numbers included in the bib
- Click on <u>View</u><u>Electronic</u>Bib.



Formatting Results



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Go

Select one of the following options:

HTML Format with Default Font of HTML Format with Small Font

HTML Format with Default Font

HTML Format with Large Font

Warning: Your electronic oldinography may include Limited or Export Controlled information.

Your electronic bibliography is not yet available.

Bibliographies are processed as they are received by the system. Your bibliography should be available 10 to 20 minutes after you submitted the request, depending on server traffic.

If you are experiencing difficulties viewing your electronic bibliography, please call DTIC Search Assistance 703-767-8265 or send a message to private-stinet@dtic.mil.

- Select a font size.
- If the bib is not yet ready, you will receive this message.
- Depending on server traffic, the bib should be ready in 20-30 minutes.



Formatting Results

Highest Classification: UNCLASSIFIED

DTIC Bibliography

Convert to pdf

Order Number:	73725
Order Date:	Thu, 20 Aug 2009
Search:	((airship or lta or lighter than air or balloons or unmanned air vehic
Docsfound:	732
Format:	1F
Custom:	
Review:	A
Route To:	Airships and Military Operations
Sort Key:	RD
Sort Order:	Descending
Title:	Airships and Military Operations

User:	parker, Candace
Org Entity Name:	
Organization Name:	Def Technical Information Ctr (BR)
Organization Office:	DTIC-BR
Street:	8725 John J. Kingman Rd Ste 0944
City:	Fort Belvoir
State:	VA

- If the bib is ready, it will display, beginning with the receipt.
- Click on the link to display in PDF.



Retrieve Bibliographies



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Cross-DB Search | View Saved Searches | View Orders | Shopping Cart

**Important information about Saved Searches and the Descriptor Hierarchy Search **

Technical Reports Quick Search | Guided Search | Advanced Search

Order <u>Number</u>	Order Date	Order Type	Action:
73725	Thu, 20 Aug 2009	Bib, Electronic	View Receipt View Electronic Bib
72694	Mon, 20 Jul 2009	TR Doc	View Receipt
72050	Fri, 26 Jun 2009	Bib, Electronic	View Receipt View Electronic Bib
72020	Thu, 25 Jun 2009	Bib, Electronic	View Receipt View Electronic Bib
72019	Thu, 25 Jun 2009	Bib, Electronic	View Receipt View Electronic Bib
72014	Thu, 25 Jun 2009	Bib, Electronic	View Receipt View Electronic Bib
71912	Mon, 22 Jun 2009	Bib, Electronic	View Receipt View Electronic Bib
71893	Sat, 20 Jun 2009	Bib, Electronic	View Receipt View Electronic Bib
71892	Sat, 20 Jun 2009	Bib, Electronic	View Receipt View Electronic Bib
71806	Wed, 17 Jun 2009	Bib, Electronic	View Receipt View Electronic Bib
70905	Thu, 14 May 2009	Bib, Electronic	View Receipt View Electronic Bib
70903	Thu, 14 May 2009	Bib, Electronic	View Receipt View Electronic Bib
70902	Thu, 14 May 2009	Bib, Electronic	View Receipt View Electronic Bib

- Click on View **Orders**
- Click on View Receipt to see the search statement and find the right bib.
- Click on View Electronic Bib to see the bibliography.
- Cannot delete Bibs.



Logging Off

- > There is no log off command.
- > Just close your browser.
- You are responsible for any limited information you printed or saved.



Contact Information

Candy Parker

703-767-7039

DSN: 427-7039

cparker@dtic.mil

Karen Nimerick

703-767-9072

DSN: 427-9072

knimeric@dtic.mil



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Variable Exploration with PASW Modeler

Richard A. Bauer richard-bauer@us.army.mil
U.S. Army Accessions Command

2 September 2009

USAAC Accessions Research Consortium

Hampton, Virginia



<u>Purpose</u>

- To explain a technique for variable exploration with PASW Modeler 13
 - Auto Classifer
 - Voting on variable importance with all models
 - Stepwise removal of "worst variable"



<u>Setup</u>

Under sources select Statistics File



Under Field Ops select Type (

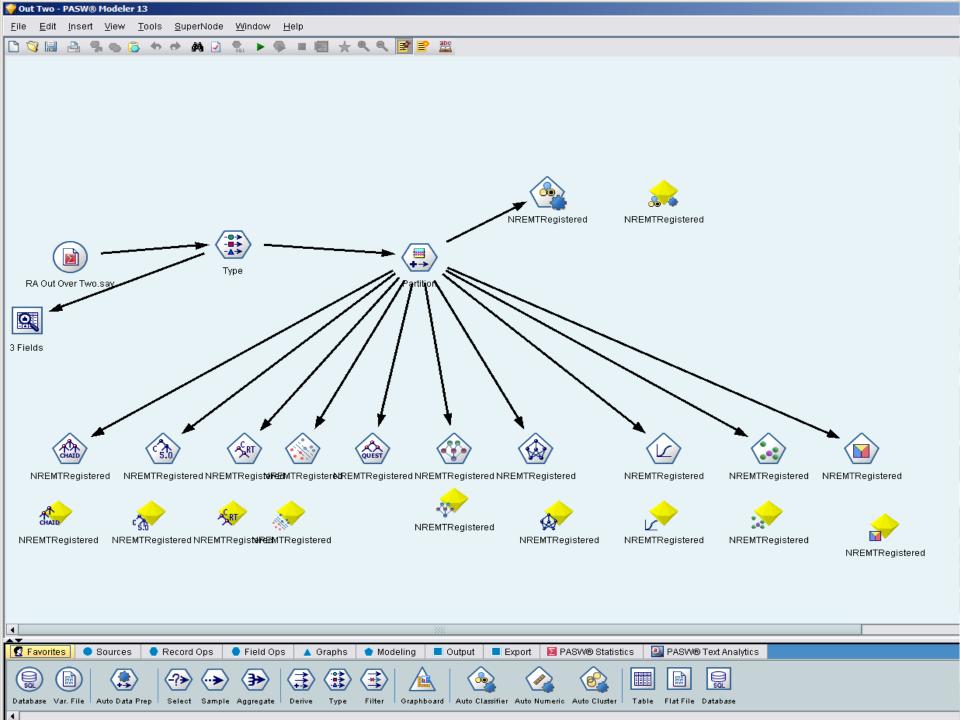


Under Output select Data Audit



- Under Field Ops select Partition
 - Training 80%
 - Testing 20%







Type Node

	Field -	Туре	Values	Missing	Check	Direction	
	NREMTRegi 00	Flag	1.0/0.0		None	Out	
	OutofService	Set	0.0,1.0		None	None	
	🚞 Expiration_D 🥢	Range	[0000-12		None	None	
	🔼 NREMT_LE 💑	Set	A,B,I,P		None	None	
	🔼 Reg_Stat 🛮 🚜	Set	IA,RG,LR,		None	None	
	🚟 Date_of_Birth 🧳	Range	[0000-12		None	○ None	
	⊕ AGE	Range	[14.3,43.51]		None	○ None	
		Set	F,M		None	🗽 In	
		Set	"",F,M		None	None	
	🔼 REQ_RACE 🀇	Set	"",C,M,N,R		None	None	
	🔼 REQ_ETHNIC 💑	Set	"","1","2","		None	None	
V	🔼 R_RACE1 🚜	Set	"",A,B,H,N,		None	None	
	🔼 MEP_RACE 🀇	Set	"","2","3","		None	None	
7	A MEP_ETHNIC	Set	"","1","2","		None	None	
1	🔼 M_RACE1 💑	Set	"",A,B,H,N,		None	None	
1	🛕 RACE2 🀇	Set	"",A,B,H,N,		None	None	
	♠ AFQT	Range	[0.0,99.0]		None	🗽 In	
	⊕ @GT	Range	[0.0,143.0]		None	None	
	🔼 STATE 🎳	Set	"",AE,AK,A		None	None	
	🔼 MARITAL 🊜	Set	"",A,D,L,M,S		None	🗽 In	
		Range	[0.0,20.0]		None	🗽 In	
		Set	"","1","6","		None	🗽 In	
1	DEPEND	Set	0.0,1.0,2		None	🗽 In	
		Set	"",I,II,IIIA,III		None	None	
		Set	"","4",A,B		None	○ None	
1	🔼 TIER 🎳	Set	"","0","1","		None	🗽 In	
	🛕 ZIP 🗪	Typeless			None	None	
	🔼 Reg_zip 🗪	Typeless			None	○ None	
		Typeless			None	None	
^	🔼 MEPS_ID 🏽 💑	Set	"",A01,A02		None	○ None	
9		Range	[0.0,96.0]		None	None	
Þ		Range	[0.0,2600		None	○ None	
ξı		Range	[0000-12		None	○ None	
(I	🚟 UPDATED 🧼 🚜	Set	2007-01		None	None	
	🚟 MIL_ETS_D 🧳	Range	[0000-12		None	○ None	
	🚟 BASICTRNG 🧳	Range	[0000-12		None	○ None	
	🔚 DOB 🧳	Range	[0000-12		None	○ None	
	🚟 SEL_RES_E 🧳	Range	[0000-12		None	○ None	
1İ	🔚 STAT_MIL_E 🧳		[0000-12		None	None	
		Range	[0000-12		None	None	
	⊕ FY	Set	1992 በ 19		None	○ None	



Data Audit

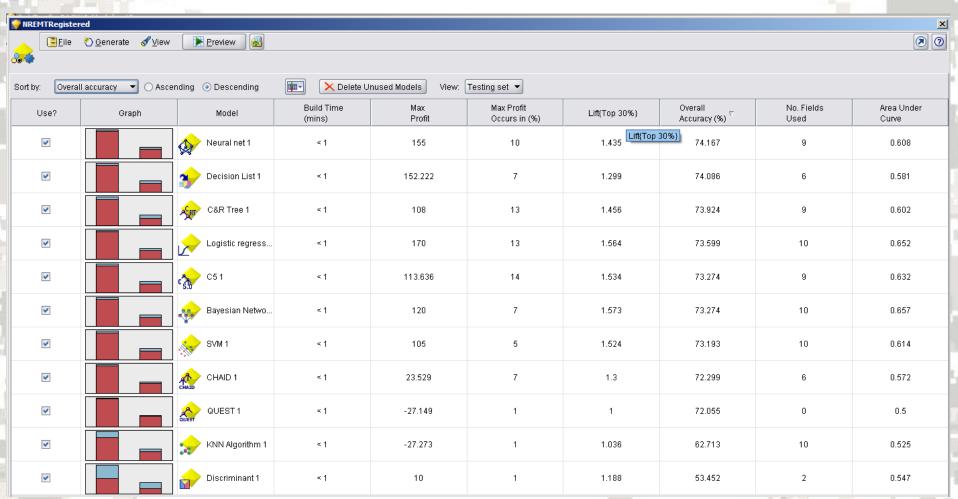


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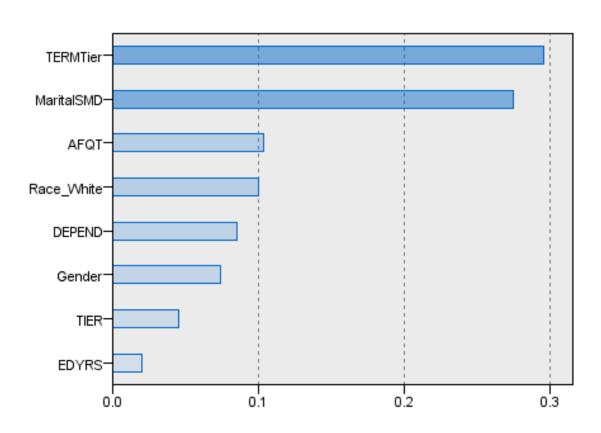
Auto Classifier Results





Run the Individual Models

Variable Importance





Start with All Variables

Model	% Accurate	Area Under Curve	Change	TERMTier	Depend	Race_ White	MaritalSMD	AFQT	Edyrs	Tier	Edlevel	Gender
Neural Net	74.492	0.644	1	1	6	4	2	3	8	5	9	7
Decision List	74.086	0.581	\leftrightarrow	0	0	0	0	0	0	0	0	0
QUEST	74.005	0.590	\leftrightarrow	1	2	3	4	6	5	5	5	7
C&RT	73.924	0.600	1	1	2	2	3	2	2	2	3	4
Logistic Regression	73.680	0.650	↑	1	3	6	2	4	7	8	9	5
Bayesian	73.355	0.655	ļ	0	0	0	0	0	0	0	0	0
QUEST	73.274	0.614	↓	1	2	3	4	6	5	5	5	7
SVM	73.030	0.623	1	1	2	3	7	4	6	5	8	9
C 5.0	72.299	0.572	\downarrow	1	2	9	4	3	6	7	5	8
KNN	62.632	0.528	\downarrow	2	6	1	3	8	2	5	4	7
Discriminant	53.452	0.547	\leftrightarrow	2	1	3	6	4	5	6	6	6
Total	70.748	0.600	ļ	11	26	34	35	40	46	48	54	60



Model	% Accurate	Area Under Curve	Change	TERMTier	MaritalSMD	Depend	Race_White	AFQT	Gender	Edyrs	Tier
C 5.0	74.086	0.611	\leftrightarrow	1	6	8	5	2	4	7	3
Decision List	74.086	0.581	\leftrightarrow	0	0	0	0	0	0	0	0
Quest	74.005	0.590	\leftrightarrow	1	4	2	3	7	5	6	8
SVM	73.924	0.626	\leftrightarrow	1	3	2	4	6	5	7	8
Bayesian	73.761	0.643	\leftrightarrow	1	2	3	5	6	4	7	8
C&RT	73.680	0.632	\leftrightarrow	1	2	6	7	3	4	5	8
Neural Net	73.274	0.646	\leftrightarrow	1	2	4	3	6	7	8	5
Logistic Regression	73.274	0.655	\leftrightarrow	1	2	3	7	4	6	8	5
CHAID	72.380	0.588	\leftrightarrow	2	1	5	3	5	5	5	4
KNN	62.794	0.525	\leftrightarrow	3	5	6	1	4	7	2	8
Discriminant	53.452	0.547	\leftrightarrow	2	6	1	3	4	6	5	6
Total	70.792	0.604	\leftrightarrow	14	33	40	41	47	53	60	63



Model	% Accurate	Area Under Curve	Change	TERMTier	MaritalSMD	Depend	Race_White	AFQT	Edyrs	Gender
-								10	-	
Neural Net	74.980	0.655	↑	1	2	3	5	4	7	6
SVM	74.249	0.618	↑	1	3	2	4	5	6	7
Decision List	74.086	0.582	\leftrightarrow	0	0	0	0	0	0	0
QUEST	74.005	0.520	\leftrightarrow	1	4	2	3	6	5	7
C&RT	73.680	0.632	\leftrightarrow	1	2	2	6	3	4	7
Bayesian	73.680	0.644	ļ	1	2	5	5	4	6	7
Logistic Regression	73.436	0.655	1	1	2	3	6	4	7	5
C 5.0	73.274	0.607	ļ	1	2	3	3	7	5	6
CHAID	72.380	0.588	\leftrightarrow	2	1	4	3	5	5	4
KNN	62.551	0.523	ļ	2	6	5	1	3	4	5
Discriminant	53.452	0.547	\leftrightarrow	2	6	7	3	4	5	6
Total	70.888	0.597	↑	13	30	36	39	45	54	60



Model	% Accurate	Area Under Curve	Change	TERMTier	Depend	MaritalSMD	AFQT	Race_White	Edyrs
Neural Net	74.655	0.645	ļ	1	2	3	5	4	6
SVM	74.330	0.605	1	1	2	3	4	5	6
Logistic Regression	74.086	0.648	\downarrow	1	2	3	4	5	6
Decision List	74.086	0.581	\leftrightarrow	0	0	4	0	0	0
QUEST	74.005	0.590	\leftrightarrow	1	2	4	6	3	5
Bayesian	73.924	0.634	↑	1	3	2	4	5	6
C&RT	73.680	0.632	\leftrightarrow	1	5	2	3	6	4
C 5.0	73.111	0.624	↓	1	2	3	4	6	5
CHAID	72.380	0.582	\leftrightarrow	3	5	1	5	2	4
KNN	72.136	0.549	↑	2	6	5	1	3	4
Discriminant	53.452	0.547	\leftrightarrow	2	1	6	4	3	5
Total	71.804	0.603	1	14	30	36	40	42	51

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Model	% Accurate	Area Under Curve	Change	TERMTier	Depend	MaritalSMD	Race_White	AFQT
Neural Net	74.411	0.647	1	1	2	4	3	5
SVM	74.330	0.606	, ↔	1	2	4	3	5
Logistic Regression	74.249	0.649	\leftrightarrow	1	2	3	4	5
Bayesian	74.167	0.631	†	1	4	3	2	5
Decision List	74.009	0.581	\	0	0	0	0	0
QUEST	74.005	0.590	\leftrightarrow	1	2	3	5	4
C 5.0	73.680	0.626	†	1	5	4	3	2
C&RT	73.680	0.632	\leftrightarrow	1	4	2	5	3
CHAID	72.380	0.584	\leftrightarrow	2	4	1	3	4
KNN	71.487	0.579	↓	2	5	4	3	1
Discriminant	53.290	0.546	1	2	1	5	3	4
Total	71.790	0.606	1	13	31	33	34	38



Model	% Accurate	Area Under Curve	Change	TERMTier	Depend	MaritalSMD	Race_White
Bayesian	75.223	0.636	1	1	2	3	4
SVM	75.142	0.574	↑	1	2	3	4
Neural Net	74.086	0.621	ļ	1	3	2	4
QUEST	73.924	0.590	↓	2	4	1	3
Logistic Regression	73.924	0.647	ļ	1	2	3	4
C 5.0	73.842	0.581	↑	1	3	2	3
C&RT	72.949	0.630	ļ	1	3	2	4
Decision List	72.868	0.566	ļ	0	0	0	0
CHAID	72.380	0.584	\leftrightarrow	1	2	4	3
KNN	72.055	0.568	↑	2	1	4	3
Total	73.639	0.600	↑	11	22	24	32



Model	% Accurate	Area Under Curve	Change	TERMTier	MaritalSMD	Depend
Neural Net	75.061	0.637	↑	2	1	3
Decision List	74.655	0.600	1	0	0	0
Bayesian	74.492	0.628	↓	1	3	2
C&RT	74.411	0.632	↑	1	2	3
Logistic Regression	74.249	0.638	†	1	3	2
SVM	74.249	0.623	ļ	1	2	3
C 5.0	74.005	0.580	1	1	2	2
QUEST	72.868	0.589	1	1	3	2
KNN	72.868	0.502	1	1	2	3
CHAID	72.380	0.586	\leftrightarrow	2	1	3
Total	73.924	0.601	↑	11	19	23

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Model	% Accurate	Area Under Curve	Change	TERMTier	Depend
Neural Net	74.086	0.626	↓	1	2
Bayesian	74.086	0.633	ļ	1	2
KNN	74.086	0.602	1	1	2
QUEST	74.005	0.599	↑	1	2
C&RT	73.842	0.621	Ţ	1	2
SVM	73.842	0.627	ļ	1	2
Logistic Regression	73.680	0.634	ļ	1	2
C 5.0	72.055	0.500	ļ	1	1
CHAID	72.055	0.573	\leftrightarrow	2	1
Decision List	69.131	0.607	ļ	0	0
Total	73.087	0.602	↓	10	16

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Model	% Accurate	Area Under Curve	Change	TERMTier	MaritalSMD
C&RT	74.411	0.632	<u> </u>	1	2
Neural Net	74.167	0.635	↑	1	2
Bayesian	74.167	0.626	↑	1	2
SVM	74.167	0.625	↑	1	2
C 5.0	74.005	0.580	↑	1	2
KNN	74.005	0.542	↓	1	2
QUEST	73.924	0.553	↓	1	2
Logistic Regression	73.924	0.637	ļ	1	2
CHAID	72.380	0.586	1	2	1
Decision List	67.262	0.630	↓	0	0
Total	73.241	0.605	↑	10	17



Model	% Accurate	Area Under Curve	Change	TERMTier
Logistic Regression	74.005	0.602	\leftrightarrow	1
Bayesian	74.005	0.602	↓	1
KNN	74.005	0.558	\leftrightarrow	1
SVM	74.005	0.602	↓	1
Leg.				
Decision List	73.599	0.602	↑	1
Neural Net	72.055	0.602	↓	1
				711 . 7
C 5.0	72.055	0.500	\downarrow	1
Total	73.390	0.581	↑	7



Conclusion

- PASW Modeler 13 saves considerable time in data exploration to determine the predictive importance of variables
- Data Mining for knowledge discovery allows accessions research to proceed in the absence of theory related to what variables are important predictors of a desired goal
- Questions, Richard Bauer, 502-626-0404, richard-bauer@us.army.mil



Cross-Industry Standard Process for Data Mining

